Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.03.96 Edition Test oil : ISO 4113

Combination No. : 9 400 083 449

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: 9 420 083 201 Governer no.

Cust. part No. : 3352891

Customer-spec, information Customer : CUMMINS : 6 CT 8.3 L Motor

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

: 40 : +- 2.0 temp. °C Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50 Tolerance mm : + 1.50 Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.15 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 88.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

	+
Spreed	+ control lever
Tolerance	+ position degree : 89.0
cm3/1000 strokes : 3.5	+ tolerance degree : + 4.0
	+
Check talerance	+ RATED SPEED
cm3/1000s. : 8.0	+
	+ rack travel mm : 9.10
Del. quantity	+ Rated speed rpm : 1145
cm3/1000 strokes : 12.5	+ Tolerance 1/min : +- 5
Tolerance	1
cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1185
cm3/1000s. : +- 4.5	+ Tolerance 1/min : + 15
Spreed	
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5	Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1300
cm3/1000s. 9.0	1
The same of the	1
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR	-
	1
	control lever
	position degree : 67.0
GUIDE SLEEVE POSITION	tolerance degree : + 4.0
00200 002002 7 00212010	to contained degree of the second
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.50	Rated speed rpm : 450
Tolerance mm : +- 0.20	rack travel mm : 4.60
governor spring	Testing:
pre-tension -	+
click setting x : 2.50	Rated speed rpm : 450
-	rack travel mm : 5.10
	Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	-
-	rack travel mm ; 2.00
Rated speed rpm : 1100 -	Rated speed rpm : 600
Aneroid pressure -	Tolerance 1/min : +- 30
hPa : -	+
Del. quantity	Rated speed rpm : 100
cm3/1000 strokes : 88.0	+
Tolerance -	CRT mm min. :> 19.00
cm3/1000 strokes : + 1.0	+
Check tolerance -	
cm3/1000s. : + 3.0 -	TORQUE CONTROL
Spreed -	+
Tolerance	Rated speed rpm : 1100
cm3/1000 strokes : 3.5	rack travel mm : 10.15
Check tolerance -	Tolerance mm : +- 0.05
cm3/1000s. : 8.0	<b> </b>
	Rated speed rpm : 550
· ·	rack travel mm : 10.20
	Tolerance mm : +- 0.10
CONTROL LEVER	
	Rated speed rpm : 400
-	rack travel mm : 10.75
•	

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

550 Rated speed rpm

Del. quantity

cm3/1000 strokes : 74.0

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. 4.0

## BREAKAWAY

9.10 Rack travel in mm: Rated speed rpm : 1145 Tolerance 1/min : +-

### STARTING FUEL DELIVERY

Rated speed rpm 100 20.00 rack travel mm : : +- 1.00 Tolerance mm Del. quantity cm3/1000 strokes : 142.0 Tolerance cm3/1000 strokes : +- 8.0

Check tolerance cm3/1000s. : +- 11.0

## LOW IDLE

Del. quantity

cm3/1000 strokes : 12.5

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000S. 4.5

Spreed

Tolerance

5.5 cm3/1000 strokes :

Check tolerance

9.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.03.96 Test oil : ISO 4113

Combination No. : 9 400 083 449AB

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: R

Governer no. : 9 420 083 201

Cust. part No. : 3352892-VERSA001

Customer—spec. information Customer : CUMMINS Motor : 6 CT 8.3 Power KW : 125.1

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

....

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.65 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 92.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

<del>-  </del>	<u>-</u>
Spreed	- control lever
Tolerance	position degree : 86.0
cm3/1000 strokes : 3.5	tolerance degree : +- 4.0
inor robo der ores : 3.5	
Check tolerance	- RATED SPEED
cm3/1000s. : 8.0	ARIED SIELD
	- rack travel mm : 9.60
No. 1 minutative	
Del. quantity cm3/1000 strokes : 12.5	- Rated speed rpm : 1045
	- Tolerance 1/min : +- 5
Tolerance	
cm3/1000 strokes : +- 2.0	- rack travel mm : 4.00
Check tolerance	- Rated speed rpm : 1085
cm3/1000s. : +- 4.5	- Tolerance 1/min : +- 15
Spreed	•
Tolerance	- rack travel mm : 0.85
cm3/1000 strokes : 5.5	- Tolerance mm : +- 0.55
Check tolerance	- Rated speed rpm : 1250
cm $3/1000$ s. : 9.0 $+$	-
+	-
+	
(B) SETTING OF INJECTION PUMP	- LOW IDLE
WITH GOVERNOR	•
+	-
1	- control lever
	- position degree : 67.0
GUIDE SLEEVE POSITION	tolerance degree : +- 4.0
Rated speed rpm : 800	- Setting point w/out bumper spring
Marca speca i pin	
Rack travel in mm: 0.50	- Rated speed rpm : 450
Tolerance mm : + 0.20	rack travel mm : 4.60
Toterance iniii : +- 0.20	rack travet will . 4.00
	Tooting
governor spring	Testing:
pre-tension +	Data dama dama (FO
click setting $x$ : 2.50 $+$	Rated speed rpm : 450
†	rack travel mm : 5.10
	Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	
<u> </u>	rack travel mm : 2.00
Rated speed rpm : 1000 +	
	Rated speed rpm : 600
Aneroid pressure +	Rated speed rpm : 60U Tolerance 1/min : +- 30
hPa : -	Tolerance 1/min : +- 30
hPa : - + + + + + + + + + + + + + + + + + +	
hPa : -	Tolerance 1/min : +- 30
hPa : - Del. quantity	Tolerance 1/min : +- 30
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance	Tolerance 1/min : +- 30 Rated speed rpm : 100
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0	Tolerance 1/min : +- 30 Rated speed rpm : 100
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance	Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	Tolerance 1/min : +- 30 Rated speed rpm : 100
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance	Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1000
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1000 rack travel mm : 10.65
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1000
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1000 rack travel mm : 10.65 Tolerance mm : + 0.05
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1000 rack travel mm : 10.65 Tolerance mm : + 0.05  Rated speed rpm : 500
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1000 rack travel mm : 10.65 Tolerance mm : + 0.05  Rated speed rpm : 500 rack travel mm : 11.85
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 8.0	Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1000 rack travel mm : 10.65 Tolerance mm : + 0.05  Rated speed rpm : 500
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1000 rack travel mm : 10.65 Tolerance mm : + 0.05  Rated speed rpm : 500 rack travel mm : 11.85 Tolerance mm : + 0.05
hPa : - Del. quantity cm3/1000 strokes : 92.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 8.0	Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1000 rack travel mm : 10.65 Tolerance mm : + 0.05  Rated speed rpm : 500 rack travel mm : 11.85

Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: +- 0.05 : 850 : 11.00 : +- 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: - : 500
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 2.0 : +- 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 103.0
BREAKAWAY Rack travel in mm Rated speed rpm Tolerance 1/min	: 9.60 : 1045 : +- 5
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	

Del. quantity		
cm3/1000 strokes	:	12.5
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000S.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	5.5
Check tolerance		
cm3/1000s.	:	9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 30.03.96 : ISO 4113

Combination No.

: 9 400 083 449AC

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number

: 9 410 230 025

Governor

Governer design.

: RSV400...1100A2C2209

Governer no.

: 9 420 083 201

Cust. part No. : 3352893-VERSA002

Customer-spec. information

Customer

: CUMMINS

Motor

: 6 CT 8.3 L

Power KW

: 134.0

#### TEST BENCH REQUIREMENTS

Inlet line

: 3.2

Test oil inlet

temp. °C

Tolerance °C

Overflow valve

: 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

173.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm 2.85 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50

: +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

travel

10.50 : +- 1.50 Tolerance mm

Difference ° CS : 3.50

BASIC SETTING

1100 Rated speed rpm :

Rack travel in mm: 10.25

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 88.5

Tolerance

cm3/1000 strokes : +-

1.0

Check tolerance

cm3/1000s.

: +-3.0

		1	
Spreed		T control lever	
Tolerance		position degree	: 89.0
cm3/1000 strokes	: 3.5	+ tolerance degree	
		+	
Check tolerance		+ RATED SPEED	
cm3/1000s.	: 8.0	†	. 0.20
Dal guantitus	•	+ rack travel mm	
Del. quantity cm3/1000 strokes	• 16.0	Rated speed rpm Tolerance 1/min	; 1145 ; <u></u>
Tolerance	. 10.0	T Toterance min	. + )
cm3/1000 strokes	· + 2.0	rack travel mm	: 4.00
Check tolerance		Rated speed rpm	
cm3/1000s.	: <del>+-</del> 4.5	Tolerance 1/min	
Spreed		1	
Tolerance		rack travel mm	: 0.85
cm3/1000 strokes	: 5.5	+ Tolerance mm	
Check tolerance		Rated speed rpm	: 1350
cm3/1000s.	: 9.0	+	
		+	
Am.\			
(B) SETTING OF INJ	ECTION PUMP	+ LOW IDLE	
WITH GOVERNOR	•	<u>†</u>	
		control lever	
		position degree	: 66.0
GUIDE SLEEVE POSIT	TON	tolerance degree	
		+	
Rated speed rpm	: 800	Setting point w/c	out bumper spring
Rack travel in mm	. 0.45	Rated speed rpm	: 400
Tolerance mm		rack travel mm	
Total arte init	0.55	I rack cravec intil	. 5.10
governor spring		Testing:	
pre-tension			
click setting x	: 2.50	Rated speed rpm	: 400
		rack travel mm	
		Tolerance mm	
FULL LOAD DELIVERY	AT FULL LOAD STOP -	1	
	•	rack travel mm	: 2.00
Rated speed rpm	: 1100	Rated speed rpm	: 595
Aneroid pressure	-	Tolerance 1/min	: +- 30
hPa	: -	t	400
Del. quantity	-	Rated speed rpm	: 100
cm3/1000 strokes	: 88.5	en <del>r.</del>	10.00
Tolerance	- 1.0	CRT mm min.	: > 19.00
	: +- 1.0	<b>†</b>	
Check tolerance		TODOUE CONTROL	
cm3/1000s.	: +- 3.0	TORQUE CONTROL	
Spreed	7	Rated speed rpm	: 1100
Tolerance cm3/1000 strokes	: 3.5	rack travel mm	
Check tolerance	. 3.7	Tolerance mm	: +- 0.05
	: 8.0	Locerance (IKI)	. (* 0.03
CIIIS/ TUUUS.	. 0.0	Rated speed rpm	: 500
	-	rack travel mm	: 12.20
		Tolerance mm	: + 0.10
CONTROL LEVER		-	
	4	Rated speed rpm	: 750
	<u> </u>	rack travel mm	: 12.20
	•	•	

FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 103.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0  Aneroid pressure hPa : - Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 116.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 4.0  BREAKAWAY  Rack travel in mm : 9.20 Rated speed rpm : 1145 Tolerance 1/min : + 5  STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 142.0	Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: + 0.10 : 950 : 11.40 : + 0.10
hPa Rated speed rpm: 500 Del. quantity cm3/1000 strokes: 103.0 Tolerance cm3/1000 strokes: + 2.0 Check tolerance cm3/1000s. : + 4.0  Aneroid pressure hPa : - Rated speed rpm: 750 Del. quantity cm3/1000 strokes: 116.0 Tolerance cm3/1000 strokes: + 2.0 Check tolerance cm3/1000s. : + 4.0  BREAKAWAY  Rack travel in mm: 9.20 Rated speed rpm: 1145 Tolerance 1/min: + 5  STARTING FUEL DELIVERY  Rated speed rpm: 100 rack travel mm: 20.00 Tolerance mm: + 1.00 Del. quantity	FUEL DELIVERY CHA	RACTERISTICS
hPa Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 116.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0  BREAKAWAY  Rack travel in mm : 9.20 Rated speed rpm : 1145 Tolerance 1/min : + 5  STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity	hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 500 : 103.0 : +- 2.0
Rack travel in mm: 9.20 Rated speed rpm: 1145 Tolerance 1/min: + 5  STARTING FUEL DELIVERY  Rated speed rpm: 100 rack travel mm: 20.00 Tolerance mm: + 1.00 Del. quantity	hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 116.0 : +- 2.0
Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity	Rack travel in mm Rated speed rpm	: 1145
Tolerance cm3/1000 strokes : + 8.0 Check tolerance cm3/1000s. : + 11.0	Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 100 : 20.00 : + 1.00 : 142.0 : + 8.0

Del. quantity		
cm3/1000 strokes	:	16.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	5.5
Check tolerance		
cm3/1000s.	:	9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.03.96 Test oil : ISO 4113

: 9 400 083 449AG Combination No.

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: 9 420 083 201 Governer no.

Cust. part No. : 3353251-VERSA006

Customer-spec. information : CUMMINS Customer Motor : 6 CT 8.3 Power KW : 133.2

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

: 1 417 413 047 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

Tolerance mm

Difference ° CS : 3.50

Rack travel in mm: 10.85 Tolerance mn:  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 97.0

cm3/1000 strokes : + 1.0

cm3/1000s.

A10

x inside diameter: 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 2.85 Tolerance mm : +- 0.05

Check

: +- 0.10tolerance mm

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel 10.50 : **←** 1.50

BASIC SETTING

1000 Rated speed rpm :

Tolerance

Check tolerance

: +- 3.0

	-
Spreed	control lever
Tolerance	- position degree : 86.0
cm3/1000 strokes : 3.5	tolerance degree : +- 4.0
Check tolerance	- RATED SPEED
cm3/1000s. : 8.0	L.
	rack travel mm : 9.80
Del. quantity	- Rated speed rpm : 1045
cm3/1000 strokes : 16.0	- Tolerance 1/min : + 5
	F Toterance Diffin : +- 5
Tolerance	manda danasa
cm3/1000 strokes : +- 2.0	- rack travel mm : 4.00
Check tolerance	- Rated speed rpm : 1085
cm3/1000s. : +- 4.5	- Tolerance 1/min : +- 15
Spreed	-
Tolerance	- rack travel mm : 0.85
cm3/1000 strokes : 5.5	- Tolerance mm : +- 0.55
Check tolerance	- Rated speed rpm : 1250
cm3/1000s. : 9.0	-
+	-
+	
(B) SETTING OF INJECTION PUMP	- LOW IDLE
WITH GOVERNOR +	<u>-</u>
+	•
+	- control lever
	- position degree : 66.0
GUIDE SLEEVE POSITION	- tolerance degree : +- 4.0
	•
Rated speed rpm : 800	- Setting point w/out bumper spring
	·
Rack travel in mm: 0.50	- Rated speed rpm : 400
Tolerance mm : + 0.20	- rack travel mm : 5.10
	- 1 don cravec han t 5.10
governor spring	- Testing:
pre-tension	resting.
click setting x : 2.50	- Rated speed rpm : 400
title setting x . 2.30	rack travel mm : 5.60
	Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Toterance man : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00
Batad around man . 1000	
Rated speed rpm : 1000 +	Rated speed rpm : 595
Aneroid pressure	Tolerance 1/min : +- 30
hPa : - +	Debad aread area
Del. quantity	Rated speed rpm : 100
cm3/1000 strokes : 97.0	
Tolerance	CRT mm min. : > 19.00
cm3/1000 strokes : + 1.0 +	•
Check tolerance +	
cm3/1000s. : $+$ 3.0	TORQUE CONTROL
Spreed	
Tolerance +	Rated speed rpm : 1000
cm3/1000 strokes : 3.5	rack travel mm : 10.85
Check tolerance +	Tolerance mm : +- 0.05
cm3/1000s. : 8.0	
+	Rated speed rpm : 500
1	
<b>.</b>	rack travel mm : 11.50
	rack travel mm : 11.50 Tolerance mm : +- 0.10
CONTROL LEVER	
CONTROL LEVER	Tolerance mm : +- 0.10
CONTROL LEVER	Tolerance mm : +- 0.10

Tolerance mm	: +- 0.10
Rated speed rpm rack travel man Tolerance man	: 835 : 11.10 : + 0.10
FUEL DELIVERY CHA	RACTERISTICS
hPa Rated speed rpm	: - : 500
Del. quantity cm3/1000 strokes	
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance cm3/1000s.	: +- 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - 700 : 105.0 : + 2.0 : + 4.0
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 9.80 : 1045 : +- 5
STARFING FUEL DELI	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	: 100 : 20.00 : + 1.00 : 142.0
cm3/1000 strokes	; <del>+</del> 8.0
Check tolerance	: +- 11.0

Del. quantity		
cm3/1000 strokes	:	16.0
Tolerance		
cm3/1000 strokes	: +	2.0
Check tolerance		
cm3/1000s.	: +	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	5.5
Check tolerance		
cm3/1000s.	:	9.0
	•	

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.03.96 Test oil : ISO 4113

Combination No. : 9 400 083 449AI

Injection pump

Pump designation : PES6A1000320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSv400...1100A2C2209

R

Governer no. : 9 420 083 201

Cust. part No. : 3352894-VERSA008

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 139.8

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check

Lneck

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 106.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

	+
Spreed	control lever
Tolerance	+ position degree : 94.0
cm3/1000 strokes : 3.5	† tolerance degree : + 4.0
	†
Check tolerance	RATED SPEED
cm3/1000s. : 8.0	70.70
Not emportative	+ rack travel mm : 10.30 + Rated speed rpm : 1295
Del. quantity cm3/1000 strokes : 16.0	+ Rated speed rpm : 1295 + Tolerance 1/min : + 5
Tolerance	T roterance training.
cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance	+ Rated speed rpm : 1340
cm3/1000s. : +- 4.5	+ Tolerance 1/min : +- 15
Spreed	+
Tolerance	+ rack travel mm : 0.85
cm3/1000 strokes : 5.5	+ Tolerance mm : + 0.55
Check tolerance	+ Rated speed rpm : 1500
cm3/1000s. : 9.0	†
	<u> </u>
(B) SETTING OF INJECTION PUMP	+ LOW IDLE
WITH GOVERNOR	Town IDEE
WEITH GOVERNION	1
	+ control lever
	position degree : 66.0
GUIDE SLEEVE POSITION	+ tolerance degree : +- 4.0
	†
Rated speed rpm : 800	+ Setting point w/out bumper spring
Rack travel in mm : 0.50	+ Rated speed rpm : 400
Tolerance mm : + 0.20	+ Rated speed rpm : 400 + rack travel mm : 5.10
TO LECTURE THE O. LO	T rack travet limit . 5.10
governor spring	+ Testing:
pre-tension	1
click setting x : 2.50	+ Rated speed rpm : 400
	† rack travel mm : 5.60
	† Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	†
Date of page of man	rack travel mm : 2.00
Rated speed rpm : 1250	+ Rated speed rpm : 570 + Tolerance 1/min : +- 30
Aneroid pressure hPa : -	T Total and Think the Su
Del. quantity	Rated speed rpm : 100
cm3/1000 strokes : 106.0	
Tolerance	+ CRT mm min. :> 19.00
cm3/1000 strokes : +- 1.0	+
Check tolerance	
cm3/1000s. : +- 3.0	† TORQUE CONTROL
Spreed	†
Tolerance	+ Rated speed rpm : 1250
cm3/1000 strokes : 3.5	+ rack travel mm : 11.35 + Tolerance mm : +- 0.05
Check tolerance cm3/1000s. : 8.0	
cm3/1000s. : 8.0	Rated speed rpm : 500
	+ rack travel mm : 11.40
	+ Tolerance mm : + 0.10
CONTROL LEVER	+
	+ Rated speed rpm : 400
	rack travel mm : 11.95

Tolerance mm : + 0.25

# BREAKAWAY

Rack travel in mm: 10.30
Rated speed rpm: 1295
Tolerance 1/min: +- 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : +- 1.00 Del. quantity cm3/1000 strokes : 142.0 Tolerance cm3/1000 strokes : +- 8.0 Check tolerance cm3/1000s. : +- 11.0

## LOW IDLE

Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000s. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.03.96 Test oil : ISO 4113

Combination No. : 9 400 083 449BB

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: R

Governer no. : 9 420 083 201

Cust. part No. : 3352898-VERSA011

Customer-spec. information Customer : CUMMINS Motor : 6 CT 8.3 L Power KW : 179.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press, bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

A16

x inside diameter: 2.0 x length mm : 600

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.05 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 117.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

	+
Spreed	+ control lever
Tolerance	+ position degree : 90.0
cm3/1000 strokes : 3.5	+ tolerance degree : +- 4.0
Ob a de la	† DATE: 0000
Check tolerance	+ RATED SPEED
cm3/1000s. : 6.0	Track travel mm : 11.00
Del. quantity	+ Rated speed rpm : 1145
cm3/1000 strokes : 16.0	+ Tolerance 1/min : + 5
Tolerance	
cm3/1000 strokes : +- 2.0	+ rack travel mm : 4.00
Check tolerance	+ Rated speed rpm : 1195
cm3/1000s. : +- 4.5	† Tolerance 1/min : + 15
Spreed	1 22
Tolerance cm3/1000 strokes : 3.5	+ rack travel mm : 1.00 + Tolerance mm : +- 0.70
Check tolerance	+ Rated speed rpm : 1350
cm3/1000s. : 5.5	There opeca i pin 1 1000
	+
<b>A.</b>	
(B) SETTING OF INJECTION PUMP	+ LOW IDLE
WITH GOVERNOR	Ť
	T control lever
	+ position degree : 66.0
GUIDE SLEEVE POSITION	+ tolerance degree : + 4.0
	+
Rated speed rpm : 800	+ Setting point w/out bumper spring
Rack travel in mm : 0.50	Rated speed rpm : 400
Tolerance mm : + 0.20	+ rack travel mm : 5.10
	1
governor spring	+ Testing:
pre-tension 0.55	†
click setting $x$ : 2.50	+ Rated speed rpm : 400
	+ rack travel mm : 5.60 + Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	T locerance mm . T 0.10
TOLK BOND DESERBIT HT TOLK BOND OTO	Frack travel mm : 2.00
Rated speed rpm : 1100	Rated speed rpm : 595
Aneroid pressure	Tolerance 1/min : +- 30
hPa : -	† <u></u>
Del. quantity	+ Rated speed rpm : 100
cm3/1000 strokes : 117.5	+ CRT mm min. :> 19.00
Tolerance cm3/1000 strokes : +- 1.0	T CKI IIII IIIII. : 7 19.00
Check tolerance	
cm3/1000s. : + 3.0	+ TORQUE CONTROL
Spreed	+
Tolerance	+ Rated speed rpm : 1100
cm3/1000 strokes : 3.5	+ rack travel mm : 12.05
Check tolerance	$+$ Tolerance mm : $+$ $0_{\circ}05$
cm3/1000s. : 6.0	Rated speed rpm : 500
	+ Rated speed rpm : 500 + rack travel mm : 12.60
	+ Tolerance non : + 0.10
CONTROL LEVER	+
	Rated speed rpm : 700
	† rack travel mm : 12.60

Tolerance mm	: +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 800 : 12.30 : +- 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: - : 500
Del. quantity cm3/1000 strokes Tolerance	: 113.5
cm3/1000 strokes Check tolerance	: <del>+-</del> 1.5
cm3/1000s.	: +- 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  BREAKAWAY  Rack travel in mm Rated speed rpm Tolerance 1/min	: + 1.5 : + 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 20.00 : + 1.00 : + 1.00 : + 7.0 : + 10.0

Del. quantity		
cm3/1000 strokes	:	16.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000S.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000s.		5.5

LOW IDLE

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.03.96 Test oil : ISO 4113

Combination No. : 9 400 083 449BC

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: R

Governer no. : 9 420 083 201

Cust. part No. : 3353232-VERSA012

Customer spec. information Customer : CUMMINS

Motor : 6 CT 8.3 Power KW : 154.6

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
% ifference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.25

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 118.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. :  $\leftarrow$  3.0

	+
Spreed	control lever
Tolerance cm3/1000 strokes : 3.5	position degree : 90.0 tolerance degree : +- 4.0
	+
Check tolerance cm3/1000s. : 8.0	RATED SPEED
	rack travel mm : 11.20
Del. quantity cm3/1000 strokes : 12.5	Rated speed rpm : 1145 Tolerance 1/min : + 5
Tolerance	T loterance min . 1- 3
cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance cm3/1000s. : +- 4.5	+ Rated speed rpm : 1200 + Tolerance 1/min : +- 15
Spreed	+
Tolerance cm3/1000 strokes : 5.5	+ rack travel mm : 0.85 + Tolerance mm : +- 0.55
Check tolerance	+ Tolerance mm : + 0.55 + Rated speed rpm : 1350
cm3/1000s. : 9.0	+
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR	†
	t control lever
	position degree : 67.0
GUIDE SLEEVE POSITION	tolerance degree : +- 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Darly through the same of G. 50	t Botal aread are
Rack travel in mm : 0.50 Tolerance mm : + 0.20	+ Rated speed rpm : 450 + rack travel mm : 4.60
	+
governor spring pre-tension	† Testing:
click setting x : 2.50	Rated speed rpm : 450
	+ rack travel mm : 5.10
FULL LOAD BELTUEDY AT EIGH LOAD STOD	Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00
Rated speed rpm : 1100	+ Rated speed rpm : 600
Aneroid pressure	+ Tolerance 1/min : + 30
hPa : - Del. quantity	Rated speed rpm : 100
cm3/1000 strokes : 118.0	<b>+</b> ' '
Tolerance cm3/1000 strokes : +- 1.0	+ CRT mm min. : > 19.00
cm3/1000 strokes : +- 1.0 Check tolerance	I -
cm3/1000s. : + 3.0	+ TORQUE CONTROL
Spreed	Pated speed ram • 1100
Tolerance cm3/1000 strokes : 3.5	+ Rated speed rpm : 1100 + rack travel mm : 12.25
Check tolerance	Tolerance mm : + 0.05
cm3/1000s. : 8.0	+
	+ Rated speed rpm : 500 + rack travel mm : 12.30
	+ Tolerance mm : + 0.10
CONTROL. LEVER	+
	+ Rated speed rpm : 400 + rack travel mm : 12.85
	ו מפע נומאבר ווצוו י וכיסא

Tolerance mm : +- 0.25

## BREAKAWAY

Rack travel in mm: 11.20
Rated speed rpm: 1145
Tolerance 1/min: +- 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm3/1000 strokes : 142.0
Tolerance
cm3/1000 strokes : +- 8.0

Check tolerance cm3/1000s. : +- 11.0

## LOW IDLE

Del. quantity cm3/1000 strokes : 12.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance 5.5 cm3/1000 strokes : Check tolerance 9.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.03.96 Edition Test oil : ISO 4113

Combination No. : 9 400 083 44980

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: 9 420 083 201 Governer no.

Cust. part No. : 3354419-VERSA013

Customer-spec. information Customer : CUMMINS Motor : 6 CT 8.3 L Power KW : 155.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

173.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0 x inside diameter : 2.0 x length mm : 600

## **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

2.85 Prestroke mm : +- 0.05 Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 : +- 1.50 Tolerance mm

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

10.50 travel Tolerance mm **:** + 1.50 3.50 Difference ° CS :

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 11.35 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 107.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +-3.0

	+
Spreed	control lever
Tolerance	position degree : 89.0
cm3/1000 strokes : 3.5	+ tolerance degree : +- 4.0
	4
Check tolerance	A RATED SPEED
cm3/1000s. : 8.0	
	+ rack travel mm : 10.30
Del. quantity	+ Rated speed rpm : 1145
cm3/1000 strokes : 16.0	+ Tolerance 1/min : +- 5
Tolerance	I roter dide training
cm3/1000 strokes : +- 2.0	Track travel mm : 4.00
Check tolerance	Rated speed rpm : 1190
cm3/1000s. : +- 4.5	+ Tolerance 1/min : +- 15
	T Toterance Dain : T 13
Spreed	T made travel mm . 0.05
Tolerance	+ rack travel mm : 0.85
cm3/1000 strokes : 5.5	+ Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1350
cm3/1000s. : 9.0	†
	<u>†</u>
AND APPRELIA APPRELIA DE SELLEMANTALIA D	1011 701 70
(B) SETTING OF INJECTION PUMP	+ LOW IDLE
WITH GOVERNOR	†
	<b>†</b>
	+ control lever
	+ position degree : 66.0
GUIDE SLEEVE POSITION	tolerance degree : +- 4.0
	<del>- +</del>
Rated speed rpm : 800	† Setting point w/out bumper spring
	+
Rack travel in mm : 0.50	+ Rated speed rpm : 400
Tolerance mm : + 0.20	† rack travel mm : 5.10
	+
governor spring	+ Testing:
pre-tension	+
click setting x : 2.50	+ Rated speed rpm : 400
_	+ rack travel mm : 5.60
	+ Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	+
	rack travel mm : 2.00
Rated speed rpm : 1100	+ Rated speed rpm : 595
Aneroid pressure	+ Tolerance 1/min : + 30
hPa : -	4
Del. quantity	Rated speed rpm : 100
cm3/1000 strokes : 107.0	1
Tolerance	+ CRT mm min. : > 19.00
cm3/1000 strokes : + 1.0	
Check tolerance	
cm3/1000s. : + 3.0	TORQUE CONTROL
Spreed	TOTAL SOLUTION
Tolerance	Rated speed rpm : 1100
cm3/1000 strokes : 3.5	rack travel mm : 11.35
Check tolerance	+ Tolerance mm : +- 0.05
	T Total differential 1.12 0.00
cm3/1000s. : 8.0	Rated speed rpm : 700
CONTROL   FUED	Tolerance mm : +- 0.10
CONTROL LEVER	Detect enough the community
	Rated speed rpm : 900
	+ rack travel mm : 12.20

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

700 Rated speed rpm Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. 4.0

#### BREAKAWAY

Rack travel in mm: 10.30 Rated speed rpm : 1145 Tolerance 1/min : + 5

## STARTING FUEL DELIVERY

Rated speed rpm 100 20.00 rack travel mm : : **←** 1.00 Tolerance mm

Del. quantity

cm3/1000 strokes : 142.0

Tolerance

cm3/1000 strokes : +- 8.0

Check tolerance

cm3/1000s. : + 11.0

## LOW IDLE

Del. quantity

cm3/1000 strokes : 16.0

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. 4.5

Spreed

Tolerance

5.5 cm3/1000 strokes :

Check tolerance

9.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.03.96 : ISO 4113 Test oil

Combination No. : 9 400 083 449CA

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: 9 420 083 201 Governer no.

Cust. part No. : 3915294-VERSA020

Customer-spec. information Customer : CUMMINS Motor : 6 CTA 8.3 L

: 164.0 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar : +- 1.5 Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 600 x length mm :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 2.85 Tolerance mm Check

tolerance mm : + - 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5- 3- 6- 2-

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel 10.50 Tolerance mm : + 1.50 Difference \* CS : 3.50

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.55 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 111.0

Tolerance cm3/1000 strokes : +-1.0

Check tolerance cm3/1000s.3.0 : +-

+	
Spreed	control lever
Tolerance	position degree : 89.0
cm3/1000 strokes : 3.5	tolerance degree : +- 4.0
1	
Check tolerance	RATED SPEED
cm3/1000s. : 8.0	
_	rack travel mm : 10.50
Del. quantity	Rated speed rpm : 1145
cm3/1000 strokes : 16.0	Tolerance 1/min : +- 5
Tolerance	
cm3/1000 strokes : +- 2.0 +	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1195
cm3/1000s, ; +- 4.5	Tolerance 1/min : +- 15
Spreed	TOCCI GING THE TENTON
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5	Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1350
cm3/1000s. : 9.0	nated speed ipin . 1990
1	
(E) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR	
1	
<u> </u>	control lever
	position degree : 66.0
GUIDE SLEEVE POSITION +	tolerance degree : + 4.0
+	•
Rated speed rpm : 800	Setting point w/out bumper spring
+	
Rack travel in mm: 0.65	Rated speed rpm : 400
Tolerance mm : + 0.35 +	rack travel mm : 5.10
+	
governor spring +	Testing:
pre-tension +	
click setting $x$ : 2.50 $+$	Rated speed rpm : 400
+	rack travel mm : 5.60
	Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP +	
<u> </u>	rack travel mm : 2.00
Rated speed rpm : 1100 +	Rated speed rpm : 595
Aneroid pressure +	Tolerance 1/min : +- 30
hPa : -	Data Lawrent III
Del. quantity +	Rated speed rpm : 100
cm3/1000 strokes : 111.0 +	ADT ' \ AO 00
Tolerance	CRT mm min. :> 19.00
cm3/1000 strokes : + 1.0 +	
Check tolerance +	TOPOUE CONTROL
cm3/1000s. : + 3.0 +	TORQUE CONTROL
Spreed	Dated aread now - 1100
Tolerance	Rated speed rpm : 1100
cm3/1000 strokes : 3.5	rack travel mm : 11.55
Check tolerance + cm3/1000s. : 8.0 +	Tolerance mm : +- 0.05
cm3/1000s. : 8.0	Rated speed rpm : 500
Ţ	Rated speed rpm : 500 rack travel mm : 12.20
T	Tolerance mm : + 0.10
CONTROL LEVER	rocerance num U. IU
CONTROL LEVER	Rated speed rpm : 750
I	rack travel mm : 12.20
T	I GOV CLUACE MIN . IC.CO

Tolerance mm Rated speed rpm	: +- 0.10 : 950
rack travel mm Tolerance mm	: 11.90 : +- 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	• ••
Rated speed rpm Del. quantity	500
cm3/1000 strokes Tolerance	: 104.5
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s.	: + 4.0
Aneroid pressure	- S
Rated speed rpm Del. quantity	750
cm3/1000 strokes Tolerance	: 120.0
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000S.	: +- 4.0
BREAKAWAY	
Rack travel in mm	
Rated speed rpm Tolerance 1/min	: 1145 : +- 5
STARTING FUEL DELI	VERY
Rated speed rpm rack travel mm	: 100 : 20.00
Tolerance mm Del. quantity	: + 1.00
cm3/1000 strokes Tolerance	: 142.0
cm3/1000 strokes Check tolerance	: +- 8.0
cm3/1000s.	: + 11.0

Del. quantity		
cm3/1000 strokes	:	16.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	5.5
Check tolerance		
cm3/1000s.	:	9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96 Test oil : ISO 4113

Combination No. : 9 400 083 449CI

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: R

Governer no. : 9 420 083 201

Cust. part No. : 3354421-VERSA028

Customer—spec. information Customer : CUMMINS Motor : 6 CT 8.3 Power KW : 154.6

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.95
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes :

Tolerance cm3/1000 strokes : + 1.0

116.0

Check tolerance cm3/1000s. : + 3.0

4	•
Spreed	control lever
Tolerance	position degree : 89.0
cm3/1000 strokes : 3.5	tolerance degree : +- 4.0
1 J.5	toterance degree . 1 4.0
Check tolerance	RATED SPEED
	KATED SPEED
cm3/1000s. : 8.0 +	40.00
<b></b> †	rack travel mm : 10.90
Del. quantity +	Rated speed rpm : 1145
cm3/1000 strokes : 16.0	Tolerance 1/min : + 5
Tolerance +	•
cm3/1000  strokes : +- 2.0 +	rack travel mm : 4.00
Check tolerance +	Rated speed rpm : 1195
cm3/1000s, : +- 4.5	Tolerance 1/min : + 15
Spreed	
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5	Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1350
cm3/1000s. : 9.0	Nated Speed (pill : 1550
CIRD (1000) 9.0	
Ţ.	
(D) OFFERING OF THE FORTING	LOCK TOLD
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR +	
+	
+	control lever
	position degree : 66.0
GUIDE SLEEVE POSITION +	tolerance degree : +- 4.0
+	-
Rated speed rpm : 800	Setting point w/out bumper spring
+	
Rack travel in mm: 0.50	Rated speed rpm : 400
Tolerance mm : +- 0.20 +	rack travel mm : 5.10
1 Octor divide likili	rack cravec han s 3110
dovonon anaina	Testing:
governor spring	resumy.
pre-tension +	Dated arred man - /00
click setting x : 2.50 +	Rated speed rpm : 400
†	rack travel mm : 5.60
	Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	
+	rack travel mm : 2.00
Rated speed rpm : 1100 +	Rated speed rpm : 570
Aneroid pressure +	Tolerance 1/min : +- 30
hPa : - +	
Del. quantity	Rated speed rpm : 100
cm3/1000 strokes : 116.0 +	
Tolerance	CRT mm min. :> 19.00
cm3/1000 strokes : +- 1.0 +	
Check tolerance	
cm3/1000s. : +- 3.0 +	TORQUE CONTROL
Spreed	· Jiidwa wellinea
Tolerance	Rated speed rpm : 1100
cm3/1000 strokes : 3.5	rack travel mm : 11.95
1	
Check tolerance	Tolerance mm : ÷- 0.05
cm3/1000s. : 8.0	Data d annual man - 500
†	Rated speed rpm : 500
†	rack travel mm : 12.00
	Tolerance mm : $+$ 0.10
CONTROL LEVER +	
+	Rated speed rpm : 400
+	rack travel mm : 12.55
•	

Tolerance mm : +- 0.25

## BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 1145
Tolerance 1/min : + 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : 4 1.00 Del. quantity cm3/1000 strokes : 142.0 Tolerance cm3/1000 strokes : + 8.0 Check tolerance cm3/1000s. : + 11.0

## LOW IDLE

Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000s. : +- 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000s. : 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.03.96 Test oil : ISO 4113

Combination No. : 9 400 083 449CJ

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: R

Governer no. : 9 420 083 201

Cust. part No. : 3354437-VERSA029

Customer—spec. information
Customer : CUMMINS
Motor : 6 CT 8.3 L
Power KW : 132.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

**B03** 

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.55 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 94.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

4	•
Spreed	- control lever
Tolerance	- position degree : 94.0
cm3/1000 strokes : 3.5	tolerance degree : + 4.0
Check tolerance	- RATED SPEED
cm3/1000s. : 8.0	Willes of EEs
	rack travel mm : 9.50
Del. quantity	Rated speed rpm : 1295
cm3/1000 strokes : 16.0	Tolerance 1/min : +- 5
Tolerance	- Total disce Thin 11
cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1335
cm3/1000s. : +- 4.5	Tolerance 1/min : +- 15
Spreed	Toterance Minth: The 15
	rack travel mm : 0.85
Tolerance + cm3/1000 strokes : 5.5	
	Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1500
cm3/1000s. : 9.0	
†	•
†	
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR +	
†	
<del>†</del>	control lever
<del></del>	position degree : 66.0
GUIDE SLEEVE POSITION +	tolerance degree : +- 4.0
t	
Rated speed rpm : 800 +	Setting point w/out bumper spring
<del>, +</del>	
Rack travel in mm: 0.50 +	Rated speed rpm : 400
Tolerance mm : + 0.20 +	rack travel mm : 5.10
<del>†</del>	
governor spring +	Testing:
pre-tension +	
click setting $x$ : 2.50 $+$	Rated speed rpm : 400
+	rack travel mm : 5.60
	Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	
+	rack travel mm : 2.00
Rated speed rpm : 1250 +	Rated speed rpm : 570
Aneroid pressure +	Tolerance 1/min : +- 30
hPa : - +	
Del. quantity +	Rated speed rpm : 100
cm3/1000 strokes : 94.0 +	,
Tolerance +	CRT mm min. : > 19.00
cm3/1000 strokes : + 1.0 +	
Check tolerance	
cm3/1000s. : +- 3.0 +	TORQUE CONTROL
Spreed	
Tolerance	Rated speed rpm : 1250
cm3/1000 strokes : 3.5	rack travel mm : 10.55
Check tolerance	Tolerance mm : +- 0.05
cm3/1000s. : 8.0	
1 0.0	Rated speed rpm : 500
<b>f</b>	
4	rack travel mm : 10.60
	rack travel mm : 10.60 Tolerance mm : + 0.10
CONTROL LEVER	rack travel mm : 10.60 Tolerance mm : + 0.10
CONTROL LEVER	Tolerance mm : + 0.10
CONTROL LEVER	

Tolerance mm : +- 0.25 BREAKAWAY 9.50 Rack travel in mm : Rated speed rpm : 1295 Tolerance 1/min : +-STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.00 : +- 1.00 Tolerance mm Del. quantity cm3/1000 strokes : 142.0 Tolerance cm3/1000 strokes : + 8.0 Check tolerance cm3/1000s. : +- 11.0 LOW IDLE Del. quantity cm3/1000 strokes : 16.0 Tolerance 2.0 cm3/1000 strokes : +-Check tolerance cm3/1000s. 4.5 Spreed Tolerance 5.5 cm3/1000 strokes : Check tolerance cm3/1000s. 9.0 End of test specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.03.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 083 449DA

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: 9 420 083 201 Governer no.

Cust. part No. : 3354634-VERSA030

Customer-spec. information Customer : CUMMINS : 6 CT 8.3 Motor

Power KW : 160.3

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

173.5 bar Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : +- 0.05 Tolerance mm Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 4

: 0-60-120-180-240 Phasing

: -300

# Beginning of delivery differende

and maximum rack

travel 10.50 : +- 1.50 Tolerance mm Difference ° CS 3.50

#### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 11.95 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 116.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance cm3/1000s. : +- 3.0

B06

	+
Spreed	control lever
Tolerance	+ position degree : 94.0
cm3/1000 strokes : 3.5	tolerance degree : +- 4.0
Check tolerance	RATED SPEED
cm3/1000s. : 8.0	+
Dat musick Shire	+ rack travel mm : 10.90
Del. quantity	Rated speed rpm : 1295
cm3/1000 strokes : 16.0	+ Tolerance 1/min : +- 5
Tolerance	†
cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance cm3/1000s. : +- 4.5	Rated speed rpm : 1345 Tolerance 1/min : +- 15
cm3/1000S. : +- 4.5	† Tolerance 1/min : +- 15
Spreed	+
Tolerance	+ rack travel mm : 0.85
cm3/1000 strokes : 5.5	+ Tolerance mm : + 0.55
Check tolerance	+ Rated speed rpm : 1500
cm3/1000s. : 9.0	1
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR	T LOW IDEE
	t control lever
	position degree : 66.0
GUIDE SLEEVE POSITION	tolerance degree : + 4.0
GOIDE SCEENE LOSTITOIA	+ toterance degree . 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm : 0.50	Rated speed rpm : 400
Tolerance mm : + 0.20	+ rack travel mm : 5.10
	+
governor spring	† Testing:
pre-tension	+
click setting x : 2.50	+ Rated speed rpm : 400
	+ rack travel mm : 5.60
	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	+
	rack travel mm : 2.00
Rated speed rpm : 1250	Rated speed rpm : 570
Aneroid pressure	+ Tolerance 1/min : + 30
hPa : -	†
Del. quantity	+ Rated speed rpm : 100
cm3/1000 strokes : 116.0	†
Tolerance	+ CRT mm min. : > 19.00
cm3/1000 strokes : +- 1.0	+
Check tolerance	
cm3/1000s. : +- 3.0	+ TORQUE CONTROL
Spreed	+
Tolerance	+ Rated speed rpm : 1250
cm3/1000 strokes : 3.5	+ rack travel mm : 11.95
Check tolerance	+ Tolerance mm : + 0.05
cm3/1000s. : 8.0	+
	Rated speed rpm : 500
	+ rack travel mm : 12.00
	+ Tolerance mm : + 0.10
CONTROL LEVER	- Cocol di 100 dini
DOM: COS DEVEN	Rated speed rpm : 400
	rack travel mm : 12.55
	I compare must be compared to the compared to

Tolerance mm : +- 0.25 BREAKAWAY Rack travel in mm: 10.90 Rated speed rpm : 1295
Tolerance 1/min : + 5 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.00 : +- 1.00 Tolerance mm Del. quantity cm3/1000 strokes : 142.0 Tolerance cm3/1000 strokes : + 8.0 Check tolerance cm3/1000s. : +- 11.0 LOW IDLE Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance 5.5 cm3/1000 strokes : Check tolerance cm3/1000s. 9.0 End of test specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.96 Test oil : ISO 4113

Combination No. : 9 400 083 4490B

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: R

Governer no. : 9 420 083 201

Cust. part No. : 3354685-VERSA031

Customer—spec. information
Customer : CUMMINS
Motor : 6 CT 8.3 L

Power KW : 129.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

B09

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50Tolerance mm :  $\leftarrow$  1.50 Difference ° CS : 3.50

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.25 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 88.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

+	•
Spreed Tolerance cm3/1000 strokes : 3.5	control lever position degree : 89.0 tolerance degree : +- 4.0
Check tolerance cm3/1000s. : 8.0	RATED SPEED
Del. quantity cm3/1000 strokes : 16.0	rack travel mm : 9.20 Rated speed rpm : 1145 Tolerance 1/min : +- 5
Tolerance + 2.0 + Check tolerance + + + + + + + + + + + + + + + + + + +	rack travel mm : 4.00 Rated speed rpm : 1185
cm3/1000s. : +- 4.5 Spreed	Tolerance 1/min : + 15
Tolerance cm3/1000 strokes : 5.5	rack travel mm : 0.85 Tolerance mm : +- 0.55
Check tolerance cm3/1000s. : 9.0	Rated speed rpm : 1350
‡	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
‡	control lever
	position degree : 66.0
GUIDE SLEEVE POSITION	tolerance degree : +- 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.50 + Tolerance mm: + 0.20 +	Rated speed rpm : 400 rack travel mm : 5.10
Toterance min . + 0.20	Tack travet was . J. To
governor spring + + + + + + + + + + + + + + + + + + +	Testing:
click setting x : 2.50	Rated speed rpm : 400
}	Tracea opeca i prii i i i i i i i
T	rack travel mm : 5.60
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 5.60 Tolerance mm : +- 0.10
+	rack travel mm : 5.60 Tolerance mm : +- 0.10  rack travel mm : 2.00
Rated speed rpm : 1100 +	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570
Rated speed rpm : 1100 + Aneroid pressure	rack travel mm : 5.60 Tolerance mm : +- 0.10  rack travel mm : 2.00
Rated speed rpm : 1100 + Aneroid pressure hPa : -	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30
Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30  Rated speed rpm : 100
Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0 Tolerance	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30
Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0 Tolerance cm3/1000 strokes : + 1.0	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30  Rated speed rpm : 100
Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30  Rated speed rpm : 100
Rated speed rpm : 1100  Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1100
Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1100 rack travel mm : 10.25
Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1100
Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1100 rack travel mm : 10.25 Tolerance mm : + 0.05
Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1100 rack travel mm : 10.25 Tolerance mm : + 0.05  Rated speed rpm : 500
Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1100 rack travel mm : 10.25 Tolerance mm : + 0.05  Rated speed rpm : 500 rack travel mm : 10.30
Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 8.0	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1100 rack travel mm : 10.25 Tolerance mm : + 0.05  Rated speed rpm : 500
Rated speed rpm : 1100 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1100 rack travel mm : 10.25 Tolerance mm : + 0.05  Rated speed rpm : 500 rack travel mm : 10.30

End of test specification sheet

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 72.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

### **BREAKAWAY**

Rack travel in mm : 9.20 Rated speed rpm : 1145 Tolerance 1/min : +- 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
bel. quantity
cm3/1000 strokes : 142.0
Tolerance
cm3/1000 strokes : + 8.0
Check tolerance
cm3/1000s. : + 11.0

## LOW IDLE

Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. : +-4.5 Spreed Tolerance 5.5 cm3/1000 strokes : Check tolerance cm3/1000s. 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.03.96 Test oil : ISO 4113

Combination No. : 9 400 083 44900

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C2209

: R

Governer no. : 9 420 083 201

Cust. part No. : 3354686-VERSA032

Customer—spec. information Customer : CUMMINS

Motor : 6 CTA - 8.3 L

Power KW : 148.4

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

outside d'ameter :

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50
Tolerance mm: +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

## Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.85 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 97.5

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : + 3.0

	1
Spreed	+ control lever
Tolerance	position degree : 89.0
cm3/1000 strokes : 3.5	+ tolerance degree : +- 4.0
	+
Check tolerance	+ RATED SPEED
cm3/1000s. : 8.0	1
	+ rack travel mm : 9.80
Del. quantity	+ Rated speed rpm : 1145
cm3/1000 strokes : 16.0	+ Tolerance 1/min : + 5
Tolerance	4
cm3/1000 strokes : +- 2.0	+ rack travel mm : 4.00
Check tolerance	+ Rated speed rpm : 1190
cm3/1000s. : + 4.5	+ Tolerance 1/min : +- 15
Spreed	+
Tolerance	+ rack travel mm : 0.85
cm3/1000 strokes : 5.5	+ Tolerance mm : + 0.55
Check tolerance	+ Rated speed rpm : 1350
cm3/1000s. : 9.0	+
	+
(B) SETTING OF INJECTION PUMP	+ LOW IDLE
WITH GOVERNOR	+
	+
	+ control lever
	+ position degree : 66.0
GUIDE SLEEVE POSITION	+ tolerance degree : +- 4.0
	†
Rated speed rpm : 800	+ Setting point w/out bumper spring
Su al duranal \$4' ma	Patert and a town at 100
Rack travel in mm: 0.50	+ Rated speed rpm : 400
Tolerance mm : + 0.20	rack travel mm : 5.10
	Tonting
governor spring	† Testing:
pre-tension click setting x : 2.50	Rated speed rpm : 400
click setting $x$ : 2.50	+ rack travel mm : 5.60
	+ Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	T roterance man . += 0.10
LOFF FOWN REFTACKS WE LOFF FOWN SIGE	rack travel mm : 2.00
Rated speed rpm : 1100	Rated speed rpm : 570
Aneroid pressure	Tolerance 1/min : +- 30
hPa : -	1 Section 17 mile So
Del. quantity	Rated speed rpm : 100
cm3/1000 strokes : 97.5	Tracea opeca i più
Tolerance	+ CRT mm min. : > 19.00
cm3/1000 strokes : + 1.0	1
Check tolerance	
cm3/1000s. : +- 3.0	+ TORQUE CONTROL
Spreed	
Tolerance	+ Rated speed rpm : 1100
cm3/1000 strokes : 3.5	+ rack travel mm : 10.85
Check tolerance	+ Tolerance mm : +- 0.05
cm3/1000s. : 8.0	1000 01100 11811
	+ Rated speed rpm : 500
	+ rack travel mm : 10.90
	+ Tolerance mm : +- 0.10
CONTROL LEVER	1
www.rriiwa.com.com.com.com.com.com.com.com.com.com	+ Rated speed rpm : 400
	+ rack travel mm : 11.45
	The state of the s

End of test specification sheet

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 500 Rated speed rpm

Del. quantity

cm3/1000 strokes : 83.0

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. 4.0

## **BREAKAWAY**

Rack travel in mm: 9,80 Rated speed rpm : 1145 Tolerance 1/min : +-

## STARTING FUEL DELIVERY

100 Rated speed rpm : 20.00 rack travel mm : Tolerance mm : 4- 1.00 Del. quantity

cm3/1000 strokes : 142.0

Tolerance cm3/1000 strokes : +- 8.0

Check tolerance

cm3/1000s. : + 11.0

## LOW IDLE

Del. quantity cm3/1090 strokes : 16.0

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. 4.5 : +--

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.03.96 Edition Test oil : ISO 4113

Combination No. : 9 400 083 44900

Injection pump

Pump designation : PES6A100b320/3RS2691

EP type number : 9 410 230 025

Governor

: RSV400...1100A2C2209 Governer design.

: 9 420 083 201 Governer no.

Cust. part No. : 3354913

Customer-spec. information : CUMMINS Customer : 6 CT 8.3 L Motor

Power KW : 129.1

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

B15

x inside diameter: 2.0 600 x length mm

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm 2.85 : + 0.05Tolerance mm

Check

: ← 0.10 tolerance mm

Rack travel in mm : 10.50 : +- 1.50 Tolerance mm

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

10.50 travel : +- 1.50 Tolerance mm Difference \* CS : 3,50

BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm: 10.25 : **←** 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 88.5

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

: +-3.0 cm3/1000s.

Spreed	control lever
Tolerance	position degree : 91.0
cm3/1000 strokes : 3.5	tolerance degree : +- 4.0
_	
Check tolerance	RATED SPEED
cm3/1000s. : 8.0	
	rack travel mm : 9.20
Del. quantity	Rated speed rpm : 1220
cm3/1000 strokes : 16.0	Tolerance 1/min : +- 5
Tolerance	TOCCI GITTO TANITY TO THE PARTY OF THE PARTY
cm3/1000 strokes : +- 2.0 +	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1260
cm3/1000s. : +- 4.5	Tolerance 1/min : +- 15
Spreed	1010141100 17 111111
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5	Tolerance mm : + 0.55
Check to rance	Rated speed rpm : 1400
cm3/1000s. : 9.0	, , , , , , , , , , , , , , , , , , ,
<u></u>	
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR	<del></del>
· · · · · · · · · · · · · · · · · · ·	control lever
	position degree : 66.0
GUIDE SLEEVE POSITION	tolerance degree : + 4.0
1	
Rated speed rpm : 800	Setting point w/out bumper spring
+	
Rack travel in mm: 0.50	Rated speed rpm : 400
Tolerance mm : + 0.20 +	rack travel mm : 5.10
+	
governor spring +	Testing:
	resering.
pre-tension +	•
	Rated speed rpm : 400
pre-tension +	Rated speed rpm : 400 rack travel mm : 5.60
pre-tension click setting x : 2.50	Rated speed rpm : 400
pre-tension +	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10 rack travel mm : 2.00
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 595
re-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10 rack travel mm : 2.00
re-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : -	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30
re-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 595
re-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100
re-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5 Tolerance	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5 Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1175
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1175 rack travel mm : 10.25
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1175
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1175 rack travel mm : 10.25 Tolerance mm : + 0.05
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1175 rack travel mm : 10.25 Tolerance mm : + 0.05  Rated speed rpm : 500
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1175 rack travel mm : 10.25 Tolerance mm : + 0.05  Rated speed rpm : 500 rack travel mm : 11.40
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 8.0	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1175 rack travel mm : 10.25 Tolerance mm : + 0.05  Rated speed rpm : 500
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1175 rack travel mm : 10.25 Tolerance mm : + 0.05  Rated speed rpm : 500 rack travel mm : 11.40 Tolerance mm : + 0.10
pre-tension click setting x : 2.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1175 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 88.5  Tolerance cm3/1000s strokes : + 1.0 Check tolerance cm3/1000s : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s : 8.0	Rated speed rpm : 400 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 595 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. :> 19.00  TORQUE CONTROL  Rated speed rpm : 1175 rack travel mm : 10.25 Tolerance mm : + 0.05  Rated speed rpm : 500 rack travel mm : 11.40

Tolerance mm	: <b>←</b> 0.10
FUEL DELIVERY CHAR	ACTERISTICS
Tolerance cm3/1000 strokes Check tolerance	: 500 : 92.5 : + 2.0
cm3/1000s.	: +- 4.0
Del. quantity	: - : 800 : 93.5 : ← 2.0 : ← 4.0
BRÉAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 9.20 : 1220 : <del>+</del> 5
STARTING FUEL DELIV	VERY
rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	100 20.00 + 1.00 142.0 + 8.0 + 11.0
LOW IDLE	
Del. quantity cm3/1000 strokes : Tolerance cm3/1000 strokes :	16.0 +- 2.0

Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 03.04.96 : ISO 4113

Combination No. : 9 400 087 459

Injection pump

Pump designation : PES6P120A720LS7181

: -10

EP type number : 0 412 726 870

Governor

Governer design. : RQ300/1050PA911-2

Governer no. : 9 420 080 313

Cust. part No. : 0160743602

Customer-spec. information

Customer

: MBB

Motor

: 0M447 LA

Power KW

: 298.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

208.5

Tolerance bar

: +- 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3 x Length mm : 1000 3.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0

Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

: 6-2-4-1-5-: 3 Firing order

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm: 15.40

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 280.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance	-
cm3/1000s. : 9.0	- FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 300	- - Rated speed rpm : 600
Rack travel in mm : 6.00 + Tolerance mm : +- 0.20 +	- Aneroid pressure - hPa : 1050
Del. quantity	- Del. quantity
cm3/1000 strokes : 15.0	cm3/1000 strokes : 280.0 Tolerance
cm3/1000 strokes : +- 3.0 +- Check tolerance +-	- cm3/1000 strokes : +- 1.0 - Check tolerance
cm3/1000s. : +- 6.0	- cm3/1000s. : + 4.0
Spreed +	- Spreed - Tolerance
cm3/1000 strokes : 8.0 + Check tolerance +	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s. : 12.0	cm3/1000s. : 9.0
(m) optitud of the portion many	•
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER
Ţ	control lever
GUIDE SLEEVE TRAVEL	position degree : 40.0 tolerance degree : +- 4.0
Rated speed rpm : 300	
guide sleeve + travel mm : 1.75 +	control lever position degree : 101.0
Tolerance mm : $\leftarrow$ 0.25	tolerance degree : +- 4.0
Rated speed rpm : 1120 + guide sleeve +	RATED SPEED
travel mm : 7.45 +	rack travel mm : 14.00 Rated speed rpm : 1103
+	Rated speed rpm : 1103 Tolerance 1/min : + 8
Rated speed rpm : 600 + guide sleeve +	rack travel mm : 4.00
travel mm : 6.00 +	Rated speed rpm : 1160
Tolerance mm : + 0.10	Tolerance 1/min : + 15
Rated speed rpm : 1050 + guide sleeve +	rack travel mm : 0.75 Tolerance mm : + 0.75
travel mm : 6.50 +	Rated speed rpm : 1300
Tolerance mm : +- 0.10 +	
Rated speed rpm : 1160 + guide sleeve +	LOW IDLE
travel mm : 10.00 +	
Tolerance mm : + 0.30 +	control lever
GUIDE SLEEVE POSITION	position degree : 74.0 tolerance degree : + 4.0
Rated speed rpm : 600	control lever
Rack travel in mm: 20.00	position degree : 11.0 tolerance degree : +- 4.0
Tolerance mm : + 0.80	Testing:
+	

Rated speed rpm rack travel mm Tolerance mm	: 6.00	Check speed 1/min : < 240
rack travel mm	: 2.00	+ FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 400	†
Tolerance 1/min	; <del></del>	+ Aneroid pressure
Dakad award awa	400	hPa : 1600
Rated speed rpm	; 100	Rated speed rpm : 1050
CRT mm min.	: > 9.00	Del. quantity cm3/1000 strokes : 264.5 Tolerance
TAROUE CONTROL		
TORQUE CONTROL		t Check tolerance cm3/1000s. : + 4.5
Rated speed rpm	: 600	+ Spreed
rack travel mm	: 15.40	+ Tolerance
Tolerance mm	: +- 0.10	cm3/1000 strokes : 8.0
Dated speed nom	. 1050	+ Check tolerance + cm3/1000s. : 12.0
Rated speed rpm rack travel mm Tolerance mm	• 1000 • 15 AA	t cm3/1000s. : 12.0
Tolorance mm	0.10	T Anomaid managemen
ioterance with	. +- 0.10	+ Aneroid pressure + hPa : 1600
Pated speed rom	: 700	Rated speed rpm : 700
Rated speed rpm rack travel mm	· 16.20	Del. quantity
Tolerance mm	: + 0.10	cm3/1000 strokes : 298.5
10to. Grioc tinii		+ Tolerance
ANICOCO (AL TYTUDE		
ANEROID/ALTITUDE COMPENSATOR TEST		theck tolerance cm3/1000s. : +- 4.5
COMPENSATOR TEST		Spreed
		Tolerance
		cm3/1000 strokes : 8.0
MEASUREMENT		Check tolerance
		+ cm3/1000s. : 12.0
Pressure hPa		+
rack travel mm		+ Aneroid pressure
Tolerance mm	: + 0.10	+ hPa :
	7/0	Rated speed rpm : 500
Pressure hPa		+ Del. quantity
rack travel mm	: -1.30	cm3/1000 strokes : 125.0
Tolerance mm	: +- 0.10	+ Tolerance + cm3/1000 strokes : +- 1.0
Pressure hPa	: 1340	Check tolerance
rack travel mm	: 0.30	cm3/1000s. : +- 4.0
Tolerance mm	: +- 0.10	Spreed
TOCCI GITOC (INI		+ Tolerance
Pressure hPa	: 1440	- cm3/1000 strokes : 8.0
rack travel mm	: 0.55	- Check tolerance
Tolerance mm	: +- 0.05	+ cm3/1000s. : 12.0
		+
START CUT-OUT		BREAKAWAY
		+
Rated speed rpm		+ Rack travel in mm : 14.00
Rated speed rpm	: < 220	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Chook		
Check speed 1/min	: > 80	† Tolerance 1/min : + 8
Specu (/mill)	00	Ţ

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 275.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 14.0

## LOW IDLE

Rated speed rpm : 300 6.00 rack travel mm : Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03,04,96 Test oil : ISO 4113

Combination No. : 9 400 087 460

Injection pump

Pump designation : PES6P120A720LS7114

: -13

EP type number : D 412 726 867

Governor

Governer design. : RQ300/1050PA911-3

: 9 420 080 314 Governer no.

Cust. part No. : 0140748502

Customer-spec. information : MBB Customer : OM447 LA Motor

Power KW : 260.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C

: 1 417 413 025 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

Test Lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter: x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 : +- 1.50 Tolerance mm

Firing order : 6-2-4-1-5-

Phasing : 0-60-120-180-240

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm: 13.50

: **←** 0.10 Tolerance mm

Del. quantity cm3/1000 strokes : 226.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. 4.0

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance	1	
cm3/1000s. :	9.0	
Rated speed rpm :	300 ‡	FULL LOAD DELIVERY AT FULL LOAD STOP
	+	Rated speed rpm : 600
Rack travel in mm : Tolerance mm : -	6.00 + 0.20	Aneroid pressure hPa : 800
Del. quantity	Ţ	Del. quantity
cm3/1000 strokes :	13.5	cm3/1000 strokes : 226.0
Tolerance cm3/1000 strokes :	+- 3.0     ‡	Tolerance cm3/1000 strokes : +- 1.0
Check tolerance	1	Check tolerance
cm3/1000s. : -	<b>-</b> 6.0 +	cm3/1000s. : +- 4.0
Spreed Tolerance	Ī	Spreed Tolerance
cm3/1000 strokes :	8.0	cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. :	12.0	Check tolerance cm3/1000s. : 9.0
cm3/1000s. :	12.0	cm3/1000s. : 9.0
<b></b>		
(B) SETTING OF INJECT WITH GOVERNOR	TION PUMP	CONTROL LEVER
MTILL GOACINION	Ţ	
CUTATION OF PRINT TO A 1/21	+	control lever
GUIDE SLEEVE TRAVEL	İ	position degree : 34.0 tolerance degree : +- 4.0
Rated speed rpm :	300 ↓	-
guide sleeve	1 75	control lever
travel mm :	2.75 + → 0.15 +	position degree : 98.0 tolerance degree : +- 4.0
	+	
Rated speed rpm : guide sleeve	1125	RATED SPEED
travel mm :	7.30 I	rack travel mm : 12.20
Tolerance mm : +	<b>⊢</b> 0.20 +	Rated speed rpm : 1103
Rated speed rpm :	600	Tolerance 1/min : + 8
guide sleeve	1	rack travel mm : 4.00
travel mm :	6.00	Rated speed rpm : 1170
Tolerance mm : +	- 0.10 <u>†</u>	Tolerance 1/min : +- 15
Rated speed rpm :	1050	rack travel mm : 0.75
guide sleeve	t 50	Tolerance mm : + 0.75
	6.50 + - 0.10 +	Rated speed rpm : 1300
•	+	
Rated speed rpm : guide sleeve	1175	LOW IDLE
	9.45	LOW IDEC
	- 0.25	
	<u> </u>	control lever position degree : 76.0
GUIDE SLEEVE POSITION	Ţ	tolerance degree : +- 4.0
	+	-
Rated speed rpm :	600	control lever position degree : 13.0
Rack travel in mm:		tolerance degree : +- 4.0
Tolerance mm : +	- 0.80 +	Tooking
	‡	Testing:
	•	

Rated speed rpm rack travel mm Tolerance mm	: 300 : 6.00 : + 0.10	Check speed 1/min : < 240
rack travel mm Rated speed rpm	: 380 +	FUEL DELIVERY CHARACTERISTICS
Tolerance 1/min Rated speed rpm	+	Aneroid pressure hPa : 1500 Rated speed rpm : 1050
CRT mm min.	:> 9.00	Del. quantity cm3/1000 strokes : 215.0 Tolerance
TORQUE CONTROL		cm3/1000 strokes : +- 2.0 Check tolerance
Rated speed rpm rack travel mm	: 13.50	cm3/1000s. : +- 5.0 Spreed Tolerance
Tolerance mm	: + 0.10	cm3/1000 strokes : 8.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 13.20 : + 0.10	cm3/1000S. : 12.0 Aneroid pressure
Rated speed rpm rack travel mm		hPa : 1500 Rated speed rpm : 800 Del. quantity
Tolerance mm	: + 0.10	cm3/1000 strokes : 239.0 Tolerance
ANEROID/ALTITUDE		cm3/1000 strokes : +- 1.5 Check tolerance
COMPENSATOR TEST	† + +	cm3/1000s. : +- 4.5 Spreed Tolerance
MEASUREMENT	‡	cm3/1000 strokes : 8.0 Check tolerance
	: 240 : -2.80 : + 0.10	cm3/1000s. : 12.0  Aneroid pressure hPa : -
Pressure hPa	+	Rated speed rpm : 500 Del. quantity
rack travel mm Tolerance mm	: −0.80 : + 0.10	cm3/1000 strokes : 131.0 Tolerance
Pressure hPa	: 920	cm3/1000 strokes : +- 1.0 Check tolerance
rack travel mm Tolerance mm	: 0.25 : + 0.05	cm3/1000s. : +- 4.0 Spreed Tolerance
Pressure hPa rack travel mm	: 980 : 0.45	cm3/1000 strokes : 8.0 Check tolerance
Tolerance mm	: + 0.05	cm3/1000s. : 12.0
START CUT-OUT	<u> </u>	BREAKAWAY
Rated speed rpm	: > 100 : < 220	Rack travel in mm : 12.20 Rated speed rpm : 1103 Tolerance 1/min : +- 8
Check speed 1/min	: > 80	Tolerance 1/min : +- 8

## STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 230.0
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000s. : +- 14.0

## LOW IDLE

Rated speed rpm 300 rack travel mm 6.00 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 13.5 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 ; +--Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance 12.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.96 Test oil : ISO 4113

Combination No. : 9 400 087 461

Injection pump

Pump designation : PESSP120A720LS7174

: -10

EP type number : 0 412 725 815

Governor

Governer design. : RQ300/1050PA774-6

Governer no. : 9 420 080 315

Cust. part No. : 0140748202

Customer-spec. information Customer : MBB Motor : OM449 A Power KW : 184.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.0

x length mm : 1000

3.0

x inside diameter:

## **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-3-5-4-2

Phasing : 0-72-144-216-288

## BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.00 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes : 194.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : + 4.0

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance cm3/1000s. : 9.0

Rated speed rpm : 300	+ Aneroid pressure
	† hPa : 700
Rack travel in mm : 6.80	+ Del. quantity
Tolerance mm : +- 0.20	+ cm3/1000 strokes : 194.5
Del. quantity	† Tolerance
cm3/1000 strokes : 20.0	cm3/1000 strokes : +- 1.0
Tolerance	+ Check tolerance
cm3/1000 strokes : +- 3.0 Check tolerance	+ cm3/1000s. : +- 4.0
cm3/1000s. : +- 6.0	+ Spreed + Tolerance
Spreed	cm3/1000 strokes : 5.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 8.0	- cm3/1000s. : 9.0
Check tolerance	+
cm3/1000s. : 12.0	<del>}</del>
	+ CONTROL LEVER
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	+ control lever
	+ position degree : 36.0
CUIDE OF FREE TRAVES	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	t control lever
Rated speed rpm : 300	position degree : 98.0
guide sleeve	tolerance degree : + 4.0
travel mm : 2.15	T total ance degree . 1 4.0
Tolerance mm : + 0.25	RATED SPEED
TO COT GITTO TIME	1000
Rated speed rpm : 1110	rack travel mm : 13.70
guide sleeve	Rated speed rpm : 1103
travel mm : 6.45	+ Tolerance i/min : + 8
Tolerance mm : + 0.25	+
	† rack travel mm : 4.00
Rated speed rpm : 600	+ Rated speed rpm : 1175
guide sleeve	+ Tolerance 1/min : +- 15
travel mm : 6.00	+
Tolerance mm : + 0.10	+ rack travel mm : 0.75
Dated around and 1050	+ Tolerance mm : + 0.75
Rated speed rpm : 1050	+ Rated speed rpm : 1300
guide sleeve travel mm : 6.00	Ţ
Tolerance mm : +- 0.10	
TO COLOR HAR COLOR	LOW IDLE
Rated speed rpm : 1170	1
guide sleeve	+
travel mm : 9.15	+ control lever
Tolerance mm : +- 0.25	+ position degree : 76.0
	† tolerance degree : +- 4.0
	†
GUIDE SLEEVE POSITION	+ control lever
Ontrod county man a 400	+ position degree : 13.0
Rated speed rpm : 600	tolerance degree : +- 4.0
Rack travel in mm : 20.00	Testing:
Tolerance mm : + 0.80	Testing.
1000 mm 1 0 000	+ Rated speed rpm : 300
	+ rack travel mm : 6.80
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Tolerance mm : + 0.10
	+
Rated speed rpm : 600	† rack travel mm : 2.00

Rated speed rpm Tolerance 1/min Rated speed rpm CRT mm min.	: +- 20 : 100	Aneroid pressure hPa : 1300 Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 210.0 Tolerance cm3/1000 strokes : +- 1.5
TORQUE CONTROL		- + Check tolerance + cm3/1000s. : +- 4.5
Rated speed rpm rack travel mm Tolerance mm	: 14.00	Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 14.70	+ cm3/1000s. : 12.0 + Aneroid pressure + hPa : 1300 + Rated speed rpm : 750
Rated speed rpm rack travel mm Tolerance mm	: 750 : 14.70 : +- 0.10	Del. quantity - cm3/1000 strokes : 211.0 - Tolerance - cm3/1000 strokes : + 2.0
ANEROID/ALTITUDE COMPENSATOR TEST		- Check tolerance - cm3/1000S. : + 5.0 - Spreed - Tolerance
MEASUREMENT		+ cm3/1000 strokes : 8.0 + Check tolerance + cm3/1000s. : 12.0
Pressure hPa rack travel mm Tolerance mm   : -0.80 : + 0.10 : 960 : 0.25 : + 0.05 : 1040 : 0.45	Aneroid pressure hPa : - Rated speed rpm : 500  Del. quantity cm3/1000 strokes : 132.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  BREAKAWAY	
START CUT-OUT Rated speed rpm Rated speed rpm Check	: < 220	Rack travel in mm: 13.70 Rated speed rpm: 1103 Tolerance 1/min: + 8
speed 1/min Check speed 1/min	: > 80 : < 240	STARTING FUEL DELIVERY
FUEL DELIVERY CHA	RACTERISTICS	- + Rated speed rpm : 100 + Del. quantity + cm3/1000 strokes : 207.0

Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0

## LOW IDLE

Rated speed rpm 300 rack travel mm 6,80 Tolerance mm : +- 0.20 Del. quantity 20.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.04.96 Test oil : ISO 4113

Combination No. : 9 400 087 500

Injection pump

Pump designation : PES6P120A720LS7257

: -10

EP type number : 9 400 087 086

Governor

Governer design. : RQV300...950PA1242

Governer no. : 9 420 080 387

Cust. part No. : 0260746602

Customer-spec. information

Customer : MBB

Motor : OM 447 LA

Power KW : 264.8

#### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.65
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 21.00

Firing order : 6-2-4-1-5-

: 3

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance "NW : +- 0.50

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm: 14.25

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 275.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

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Check tolerance cm3/1000s.  Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: ← 3.0 : ← 6.0	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1300 s : 275.5 s : + 1.0 : + 4.0
(B) SETTING OF IN WITH GOVERNOR	NECTION PUMP	CONTROL LEVER control lever	
GUIDE SLEEVE TRAV	/EL	<ul> <li>position degree</li> <li>tolerance degree</li> </ul>	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1050 : 7.80 : +- 0.10	control lever position degree tolerance degree RATED SPEED	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 700 : 5.45 : +- 0.25	rack travel mm Rated speed rpm Tolerance 1/min	: 1000
Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 0.75 : +- 0.25	rack travel mm Rated speed rpm Tolerance 1/min	: 1125 : +- 15
Rated speed rpm guide sleeve travel mm Tolerance mm	: 500 : 3.25 : +- 0.25	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 1230
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1165 : 9.45 : + 0.25	LOW IDLE  control lever  position degree	
GUIDE SLEEVE POSI	TION	tolerance degree	: +- 4.0
Rated speed rpm Rack travel in mm		+ control lever + position degree + tolerance degree	
Tolerance mm		Testing:	
	Y AT FULL LOAD STOP	Rated speed rpm rack travel mm Tolerance mm	: 300 : 5.50 : +- 0.10
Rated speed rpm	: 600	Rated speed rpm	: 100

CRT mm min.	; > 9.20	+ Check + speed 1/min : < 240
Rated speed rpm	: 325	FUEL DELIVERY CHARACTERISTICS
		T FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL		Aneroid pressure
Rated speed rpm	: 600	+ hPa : 1300 + Rated speed rpm : 950
rack travel mm	: 14.25	+ Del. quantity
Tolerance mm	: +- 0.05	cm3/1000 strokes : 245.5 Tolerance
Rated speed rpm	: 950	+ cm3/1000 strokes : $+$ 2.0
Rated speed rpm rack travel mm Tolerance mm	: 13.65 · +- 0.05	+ Check tolerance + cm3/1000s. : +- 5.0
		Spreed
Rated speed rpm	: 750 : 14.25	+ Tolerance + cm3/1000 strokes : 8.0
rack travel mm Tolerance mm	: +- 0.05	+ Check tolerance
		cm3/1000s. : 12.0
Rated speed rpm	: 840 : 13.90	Aneroid pressure
rack travel mm Tolerance mm	: + 0.10	+     hPa     : 1300
		Rated speed rpm : 750
ANEROID/ALTITUDE		
COMPENSATOR TEST		Tolerance
		+ cm3/1000 strokes : +- 2.0 + Check tolerance
SETTING		+ cm3/1000s. : +- 5.0
Datad anood nam	• 500	+ Spreed + Tolerance
Rated speed rpm Pressure hPa	: 1300	- cm3/1000 strokes : 8.0
rack travel mm	: 14.25	+ Check tolerance
Tolerance mm	: +- 0.05	- cm3/1000s. : 12.0
MEASUREMENT		Aneroid pressure
Pressure hPa		+ hPa : - + Rated speed rpm : 500
Rated speed rpm	500	+ Del. quantity
•		+ cm3/1000 strokes : 146.5
Rated speed rpm	: 500	+ Tolerance + cm3/1000 strokes : +- 1.0
Pressure hPa	: 760	+ Check tolerance
rack travel mm Tolerance mm	: 2.25	+ cm3/1000s. : +- 4.0
loterance mm	: +- 0.0	+ Spreed + Tolerance
Pressure hPa		+ cm3/1000 strokes : 5.0
rack travel mm Tolerance mm	: 0.90 : + 0.10	+ Check tolerance + cm3/1000S. : 9.0
locerance iikii	. +- 0.10	T (115/10003: ). 1
START CUT-OUT		BREAKAWAY
Rated speed rom	: > 100	‡
Rated speed rpm Rated speed rpm	: < 220	Rack travel in mm : 12.60 Rated speed rpm : 1000
Check		+ Tolerance 1/min : +- 5
speed 1/min	: > 80	Ī

## STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity cm3/1000 strokes : 236.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 14.0

## LOW IDLE

Del. quantity cm3/1000 strokes : 16.5

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 29.03.96 Edition Test oil : ISO 4113

Combination No. : 0 402 066 702

Injection pump

Pump designation : PES6P110A120RS3336

: -1

EP type number : 0 412 016 751

Governor

Governer design. : RSV550...1100P2A586

: -1 Governer no. : 0 421 833 480

Cust. part No. : 3926887

Customer-spec. information Customer : CDC : 6CTA Motor Power KW : 194.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 015

**CO6** 

Outside diameter : 6.0

x inside diameter : 3.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05 Check

tolerance mm

Rack travel in mm : 10.50

Tolerance mm :  $\leftarrow$  1.50

: 1-5-3-6-2-Firing order : 4

Phasing : 0-60-120-180-240

: -300

; +- 0.10

: +- 0.50 Tolerance

Check

tolerance \*NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.00 : +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 15.00 Difference ° CS : 1.50

	Aneroid pressure hPa : 1500
BASIC SETTING	Del. quantity
Rated speed rpm : 1100	cm3/1000 strokes : 187.0 Tolerance
	cm3/1000 strokes : +- 1.0 Check tolerance
Rack travel in mm: 14.25 Tolerance mm: + 0.05	cm3/1000s. : +- 3.0 Spreed Tolerance
Del. quantity cm3/1000 strokes : 187.0	cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
Tolerance cm3/1000 strokes : +- 1.0	(1137 10003
Check tolerance cm3/1000s. : +- 3.0	CONTROL LEVER
Spreed	control lever position degree : 95.0 tolerance degree : + 4.0
Check tolerance	RATED SPEED
cm3/1000s. : 12.0	rack travel mm : 13.25 Rated speed rpm : 1185
Del. quantity cm3/1000 strokes : 26.5	Tolerance 1/min : + 5 rack travel mm : 8.50
cm3/1000 strokes : + 2.0 + Check tolerance	Rated speed rpm : 1235 Tolerance 1/min : + 5
cm3/1000s. : + 4.5 Spreed	rack travel mm : 0.85
Tolerance cm3/1000 strokes : 4.0	Tolerance mm : +- 0.55 Rated speed rpm : 1400
Check tolerance cm3/1000s. : 6.5	
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR	control lever position degree : 67.5 tolerance degree : + 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
Rated speed rpm : 800	Rated speed rpm : 550
Rack travel in mm : 0.50 Tolerance mm : + 0.20	rack travel mm : 4.60
governor spring	Testing:
pre-tension click setting x : 3.50	Rated speed rpm : 550 rack travel mm : 5.10 Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 100
Rated speed rpm : 1100	CRT mm min. : > 19.00
+	

## TORQUE CONTROL

Rated speed rpm : 1100 rack travel mm : 14.25 Tolerance mm : +- 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 1000 Pressure hPa : 1500

## **MEASUREMENT**

Pressure hPa : Rated speed rpm : 1000
rack travel mm : 11.10
Tolerance mm : + 0.20

Rated speed rpm : 1000

Pressure hPa : 995
rack travel mm : 13.45
Tolerance mm : + 0.20

Pressure hPa : 655 rack travel mm : 12.05 Tolerance mm : +- 0.20

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 122.5
Tolerance
cm3/1000 strokes : +- 1.0

3.0

Check tolerance cm3/1000s. : +-

#### **BREAKAWAY**

Rack travel in mm : 13.25
Rated speed rpm : 1185
Tolerance 1/min : +- 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 154.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s : + 25.0

#### LOW IDLE

Del. quantity
cm3/1000 strokes : 26.5
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000s. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000s. : 6.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.03.96 Test oil : ISO 4113

Combination No. : 0 402 776 834

Injection pump

Pump designation : PES6P120A720RS7382 EP type number : 0 412 726 943

Governor

Governer design. : RSV400...750P4A610

: -1

: 0 421 833 520 Governer no.

Cust. part No. : RE66451

Customer-spec. information : DEERE Customer : 6081 HF001 Motor : 175.0 Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C 2.0

: 2 417 413 079 Overflow valve

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar 1.5

: 1 680 750 015 Test lines

Outside diameter : 6.0 x inside diameter : 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

tolerance mm

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +-1.0

3.60 Prestroke mm : +- 0.05 Tolerance mm Check : + 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300 Tolerance : + 0.30

Check

tolerance 'NW : + - 0.75

Start of delivery blocking

\*NW after s.o.d. : 9.00 Tolerance : +- 0.50

Check

tolerance °NW : ← 0.75

Barrel no. :

Beginning of delivery differende

and maximum rack

14.00 travel Difference ° CS : 2.50

BASIC SETTING

700 Rated speed rpm :

C09

+	Check tolerance
Rack travel in mm: 13.40 Tolerance mm: +- 0.05	cm3/1000s. : +- 4.0 Spreed Tolerance
Del. quantity = + + + + + + + + + + + + + + + + + +	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Tolerance	
Check tolerance	CONTROL LEVER
cm3/1000s. : + 4.0	control lever position degree : 91.0 tolerance degree : +- 4.0
Tolerance cm3/1000 strokes : 5.0	RATED SPEED
Check tolerance cm3/1000s. : 9.0	rack travel mm : 12.00 Rated speed rpm : 755 Tolerance 1/min : + 5
Del. quantity cm3/1000 strokes : 22.0 Tolerance	rack travel mm : 4.00 Rated speed rpm : 790
cm3/1000 strokes : + 3.0 Check tolerance	Tolerance 1/min : +- 5
cm3/1000S. : +- 5.0 +- Spreed +- Tolerance	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 950
cm3/1000 strokes : 8.0 + Check tolerance +	rack travel mm : 4.00
cm3/1000s. : 12.0	Rated speed rpm : 820
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
	control lever
GUIDE SLEEVE POSITION  Rated speed rpm : 800	position degree : 74.0 tolerance degree : +- 4.0
Rack travel in mm: 0.50	Setting point w/out bumper spring
Tolerance mm : + 0.20	Rated speed rpm : 400 rack travel mm : 5.00
governor spring pre-tension click setting x : 2.50	Testing:
	Rated speed rpm : 400 rack travel mm : 5.50
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.10
Rated speed rpm : 700 Aneroid pressure hPa : -	Rated speed rpm : 100  CRT mm min. : > 19.00
Del. quantity cm3/1000 strokes : 247.0	
Tolerance cm3/1000 strokes : + 1.0	TORQUE CONTROL

700 Rated speed rpm : 13.40 rack travel mm : Tolerance mm : +- 0.05 START CUT-OUT Rated speed rpm : > 100 Check speed 1/min ; > 80 **BREAKAWAY** Rack travel in mm: 12.00 Rated speed rpm : Tolerance 1/min : +-STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50 : +- 0.50 Tolerance mm Del. quantity cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes : +- 20.0Check tolerance cm3/1000s. : **←** 25.0 LOW IDLE Del. quantity cm3/1000 strokes : 22.0 Tolerance 3.0 cm3/1000 strokes : +-Check tolerance cm3/1000s. 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance 12.0 cm3/1000s. End of test specification sheet

tika of test specification since

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 28.03.96 : ISO 4113

Combination No. : 0 402 776 835

Injection pump

Pump designation : PES6P120A720RS7382 EP type number : 0 412 726 943

Governor

Governer design. : RSV400...750P4A607

: -1

Governer no.

: 0 421 833 521

Cust. part No. : RE66458

Customer-spec. information Customer : DEERE

: 6081 HF001 Motor

Power KW

: 175.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 : +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance "NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 9.00

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

: 1 Barrel no.

## Beginning of delivery differende

and maximum rack

14.00 travel Difference ° CS : 2.50

### BASIC SETTING

Rated speed rpm : 700

	+ Check tolerance
Rack travel in mm : 13.40 Tolerance mm : +- 0.05	+ cm3/1000s. : +- 4.0 - Spreed - Tolerance
	+ cm3/1000 strokes : 5.0
Del. quantity cm3/1000 strokes : 247.0	t Check tolerance cm3/1000s. : 9.0
Tolerance cm3/1000 strokes : + 1.0	‡
Check tolerance	+ CONTROL LEVER
cm3/1000s. : +- 4.0	control lever position degree : 91.0
Spreed Tolerance	tolerance degree : +- 4.0
cm3/1000 strokes : 5.0	RATED SPEED
Check tolerance	rack travel mm : 12.00
cm3/1000s. : 9.0	+ Rated speed rpm : 755 + Tolerance 1/min : + 5
Del. quantity	+
cm3/1000 strokes : 22.0 Tolerance	+ rack travel mm : 4.00 + Rated speed rpm : 790
cm3/1000 strokes : +- 3.0	Tolerance 1/min : +- 5
Check tolerance	0.05
cm3/1000S. : +- 5.0 Spreed	+ rack travel mm : 0.85 + Tolerance mm : + 0.55
Tolerance	Rated speed rpm : 950
cm3/1000 strokes : 8.0	+
Check tolerance cm3/1000s. : 12.0	+ rack travel mm : 4.00 + Rated speed rpm : 820
- TE-0	The cod operation is the code operation in the code operation in the code operation is the code operation in t
(D) CETTANC OF THE COTTON OF THE	†
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
	+
4,44,00	t control lever
GUIDE SLEEVE POSITION	position degree : 74.0
Rated speed rpm : 800	tolerance degree : + 4.0
Rated speed rpm : 800	F Setting point w/out bumper spring
Rack travel in mm: 0.50	+
Tolerance mm : +- 0.20	+ Rated speed rpm : 400 + rack travel mm : 5.00
governor spring	TOUR CI GVCC HRIV
pre-tension	† Testing:
click setting x : 2.50	Rated speed rpm : 400
	+ rack travel mm : 5.50
FULL LOAD DELIVERY AT FULL LOAD STOP	† Tolerance mm : + 0.10
Rated speed rpm : 700 Aneroid pressure	Rated speed rpm : 100
hPa : -	T CRT mm min. : > 19.00
Del. quantity	†
cm3/1000 strokes : 247.0 Tolerance	TORQUE CONTROL
cm3/1000 strokes : +- 1.0	+

700 Rated speed rpm : 13.40 rack travel mm Tolerance mm : +- 0.05 START CUT-OUT 100 Rated speed rpm :> Check speed 1/min ; > 80 BREAKAWAY Rack travel in mm: 12.00 Rated speed rpm : 755 Tolerance 1/min : +-STARTING FUEL DELIVERY Rated speed rpm 100 20.50 rack travel mm : : + 0.50Tolerance mm Del. quantity cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes : +- 20.0 Check tolerance cm3/1000s. : **←** 25.0 LOW IDLE Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 5.0 Spreed Tolerance 8.0 cm3/1000 strokes : Check tolerance cm3/1000S.12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 03.04.96 Edition Test oil : ISO 4113

Combination No. : 9 400 030 740

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV425...1200A0C853R

Governer no. : 9 420 034 719

Cust. part No. : 3929410

Customer-spec. information Customer : CDC : 6BT Motor Power KW : 100.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance \*C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : <del>+-</del> 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.50 : +- 0.50 Tolerance

Check

: +- 0.75 tolerance "NW

: 1 Barrel no.

#### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.85 Tolerance mm :  $\leftarrow$  0.05

C15

Del. quantity cm3/1000 strokes : 90.0	Check tolerance cm3/1000s. : 6.5
Tolerance + 1.0 + 1.0	CONTROL LEVER
Check tolerance cm3/1000s. : + 3.0	control lever position degree : 101.5
Spreed Tolerance cm3/1000 strokes : 4.0	tolerance degree : +- 4.0  RATED SPEED
Check tolerance cm3/1000s. : 6.5	rack travel mm : 9.85 Rated speed rpm : 1250 Tolerance 1/min : + 5
Del. quantity cm3/1000 strokes : 18.5 Tolerance	rack travel mm : 4.50 Rated speed rpm : 1305
cm3/1000 strokes : +- 2.0 +- Check tolerance cm3/1000s. : +- 4.5 +- Spreed	Tolerance 1/min : + 5  rack travel mm : 0.85  Tolerance mm : +- 0.55
Tolerance + cm3/1000 strokes : 6.0 + Check tolerance	Rated speed rpm : 1400  rack travel mm : 4.50
cm3/1000s. : 8.0	Rated speed rpm : 1310
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
I	
GUIDE SLEEVE POSITION	control lever position degree : 78.0 tolerance degree : +- 4.0
Rated speed rpm : 800	position degree : 78.0
Rated speed rpm : 800  Rack travel in mm : 0.50  Tolerance mm : + 0.20	position degree : 78.0 tolerance degree : +- 4.0
Rated speed rpm : 800  Rack travel in mm : 0.50	position degree : 78.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 425 rack travel mm : 4.60  Testing:
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 78.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 425 rack travel mm : 4.60
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200	position degree : 78.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 425 rack travel mm : 4.60  Testing:  Rated speed rpm : 425 rack travel mm : 5.10
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : 900	position degree : 78.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 425 rack travel mm : 4.60  Testing:  Rated speed rpm : 425 rack travel mm : 5.10 Tolerance mm : +- 0.10
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure	position degree : 78.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 425 rack travel mm : 4.60  Testing:  Rated speed rpm : 425 rack travel mm : 5.10 Tolerance mm : +- 0.10  Rated speed rpm : 100
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 90.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	position degree : 78.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 425 rack travel mm : 4.60  Testing:  Rated speed rpm : 425 rack travel mm : 5.10 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1200
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 90.0 Tolerance cm3/1000 strokes : + 1.0	position degree : 78.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 425 rack travel mm : 4.60  Testing:  Rated speed rpm : 425 rack travel mm : 5.10 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00

## ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm	:	800
Pressure hPa	:	900

## **MEASUREMENT**

Pressure hPa	:	_
Rated speed rpm	:	800
rack travel mm	:	8.70
Tolerance mm	: +	- 0.20

Rated	speed	rpm	:	800
-------	-------	-----	---	-----

Pressure hPa	:	450
rack travel mm	:	10.50
Tolerance mm	: +	- 0.20

Pressure hPa	;	275
rack travel mm	:	9.50
Tolerance mm	: +-	0.20

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa	:	-
Rated speed rpm	:	800
Del. quantity		
and/1000 atrakan		45

65.5 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.: +- 3.0

## BREAKAWAY

Rack travel in mm : 9.85 Rated speed rpm : 1250
Tolerance 1/min : +-

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : +- 0.50 Del. quantity

cm3/1000 strokes : 120.5

Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : <del>+-</del> 15.0

## LOW IDLE

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: +-	18.5 2.0 4.5	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	6.0 8.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.04.96 Test oil : ISO 4113

Combination No. : 0 400 074 873

Injection pump

Pump designation : PES4M55C32ORS184 EP type number : 0 410 054 938

Governor

Governer design. : RSF375/2000M87 Governer no. : 0 420 021 290

Cust. part No. :

Customer-spec. information Customer : MB-PKW Motor : OM601-2.3L Power KW : 60.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 148.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.05
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 21.00 Tolerance mm : +- 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Start of delivery blocking

\*NW after s.o.d. : 16.50
Tolerance : +- 0.20
Check
tolerance \*NW : +- 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.70 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 40.5

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : + 1.5

Spreed Tolerance

cm3/1000 strokes : 2.5

Check tolerance cm3/1000s. : 3.0	
Rated speed rpm : 375	
Rack travel in mm : 4.70 Tolerance mm : +- 0.10 Del. quantity	
cm3/1000 strokes : 6.5 Tolerance	
cm3/1000 strokes : +- 0.5 Spreed	
Tolerance cm3/1000 strokes : 1.0	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
IDLE STAGE	
Rack travel in mm : 6.25 Tolerance mm : +- 0.25	,
FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm : 1000 Ref. pressure	
ALDA / ADA hPa : 1100	
Del. quantity cm3/1000 strokes : 40.5	
Tolerance cm3/1000 strokes : +- 0.5	
Check tolerance cm3/1000s. : + 1.5	
Spreed	
Tolerance cm3/1000 strokes : 2.5	
Check tolerance	
cm3/1000s. : 3.0	
RATED SPEED	
control lever	
position degree : 50.0	
position degree : 50.0  rack travel mm : 9.00 Rated speed rpm : 2200  rack travel mm : 0.50	
position degree : 50.0  reck travel mm : 9.00  Rated speed rpm : 2200	

Rated speed rpm	: 1000
CRT mm max.	: 1.45
LOW IDLE	
control lever position degree tolerance degree	: 12.5 : +- 2.0
Setting point w/c Râted speed rpm rack travel mm	375
SET IDLE AUXILIAN	RY SPRING
Rated speed rpm rack travel mm Tolerance mm	: 450 : 3.40 : +- 0.10
Load pick-up	
Rated speed rpm	: 250
CRT mm min.	: > 10.20
Rated speed rpm	: 1000
CRT mm max.	: 1.45
rack travel mm Rated speed rpm	: 4.70 : 375
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.70 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1500 : 12.30 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1950 : 12.20 : + 0.10
ADJUSTMENT TEST A	DA/ALDA
SETTING	
Rated speed rpm	: 1000
Ref. pressure ALDA / ADA hPa	: 940

rack travel mm	: -0.10	+
Tolerance mm		STARTING FUEL DELIVERY
MEASUREMENT		ALVINITING I OFF PEFTACINI
Rated speed rpm	: 1000	Rated speed rpm : 100 + rack travel mm : > 20.10
Ref. pressure		+ Del. quantity
ALDA / ADA hPa		+ cm3/1000 strokes : 59.0
rack travel mm	: -0.40	† Tolerance
Tolerance mm	: +- 0.10	+ cm3/1000 strokes : +- 4.0
	4000	+ Check tolerance
Rated speed rpm	: 1000	+ cm3/1000s. : + 5.0
Ref. pressure ALDA / ADA hPa	. 750	Spreed
	: -1.50	+ Tolerance + cm3/1000 strokes : 6.0
reck travel am Tolerance mm	; + 0.20	+ Check tolerance
iotelaire um	, 0.60	+ cm3/1000s. : 6.0
		T 6115/10003. : 0.0
	D4.075D7.077.00	<del></del>
FUEL DELIVERY CHA	RACIERISIICS	Ţ
Ref. pressure	4450	+ LOW IDLE
ALDA / ADA hP@		<b>1</b> 0-1
Rated speed rpm	: 1500	+ Del. quantity
Del. quantity	. 44.0	+ cm3/1000 strokes : 7.8
cm3/1000 strokes	: 41.0	Check tolerance
Tolerance	· · no	+ cm3/1000s. : +- 2.3
cm3/1000 strokes	; <del></del> 0.8	+ Spreed + Check tolerance
Check tolerance	: +- 1.8	
cm3/1000s.	: +- 1.8	+ cm3/1000s. : 1.5
Spreed		I
Tolerance cm3/1000 strokes	: 2.5	I
Check tolerance	. 6.3	
cm3/1000s.	: 3.0	4
		F Grad : > 47.00
Ref. pressure		1
ALDA / ADA hPa	: 1100	frad : < 44.50
Rated speed rpm		+
Spreed		
Del. quantity		+ SETTING PNEUMATIC FAST IDLE (ELA)
cm3/1000 strokes	: 41.5	
Tolerance		+
cm3/1000 strokes	: + 1.0	+ control lever
Check tolerance		position degree : 12.5
cm3/1000s.	: <del></del> 2.0	+ tolerance degree : +- 2.0
Spreed		+
Tolerance		+ Rated speed rpm : 425
cm3/1000 strokes	: 2.5	+
Check tolerance	<u> </u>	+ Rack travel in mm: 7.30
cm3/1000s.	: 3.5	+ Tolerance mm : +- 0.80
	7	+ Del. quantity
		+ cm3/1000 strokes : 16.0
	·~	
	·~	
HIGH IDLE	'~	+ cm3/1000 strokes : +- 3.5
HIGH IDLE	`~	cm3/1000 strokes : +- 3.5 Check tolerance
HIGH IDLE Ref. pressure ALDA / ADA hPa	: 1100	+ cm3/1000 strokes : +- 3.5

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever

position degree : 12.5 tolerance degree : +- 2.0

control lever

position degree : 50.0

**ADJUSTMENT** 

control lever

position degree : 50.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 01.04.96 Edition Test oil : ISO 4113

Combination No. : 0 401 878 140

Injection pump

Pump designation : PE8P120A520/5RS427 : 0 411 828 048

EP type number

Governor

Governer design. : RSUV300...900P0A320

: -1

: 0 421 829 107 Governer no.

Cust. part No. :

Customer-spec. information

Customer · MWM

: TBD 234 V8 Motor

Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter: 1.5

: 1000 x length mm

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : : +- 1.0 Tolerance bar

Prestroke mm 2.85 : +- 0.05Tolerance mm

Check

tolerance mm : + - 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-8-5-4-7

: - 2- 3- 6

: 0-30-90-120-180 Phasing

: -210-270-300

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : ← 0.50

Check

tolerance °NW : + - 0.75

1 Barrel no.

BASIC SETTING

900 Rated speed rpm :

Rack travel in mm: 13.75 Tolerance mm : +- 0.05

Del. quantity

250.0 cm3/1000 strokes :

Talannaa	1
Tolerance cm3/1000 strokes : +- 1.0	I
CADITOGG STICKES 1.0	CONTROL LEVER
Check tolerance	+ CONTINUE CEPEN
cm3/1000s. : +- 4.0	+ control lever
	position degree : 119.0
Spreed	+ tolerance degree : + 4.0
Tolerance	+
cm3/1000 strokes : 5.0	+ RATED SPEED
	†
Check tolerance	+ rack travel mm : 12.70
cm3/1000s. : 9.0	+ Rated speed rpm : 945 + Tolerance 1/min : +- 5
Del. quantity	† Tolerance 1/min : +- 5
cm3/1000 strokes : 23.0	rack travel mm : 4.00
Tolerance	+ Rated speed rpm : 980
cm3/1000 strokes : + 3.0	+ Tolerance 1/min : +- 15
Check tolerance	-
cm3/1000s. : +- 6.0	+ rack travel mm : 0.85
Spreed	+ Tolerance mm : + 0.55
Tolerance	+ Rated speed rpm : 1130
cm3/1000 strokes : 8.0	+
Check tolerance	†
cm3/1000s. : 12.0	LOW IDLE
	T LOW IDLE
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	control lever
WEITH GOVERNOON	position degree : 76.0
	+ tolerance degree : + 4.0
	T total disc degree . The
	+
GUIDE SLEEVE POSITION	+ Setting point w/out bumper spring
	Setting point w/out bumper spring
GUIDE SLEEVE POSITION Rated speed rpm : 800	Setting point w/out bumper spring Rated speed rpm : 300
Rated speed rpm : 800	Setting point w/out bumper spring
Rated speed rpm : 800 Rack travel in mm : 0.50	Setting point w/out bumper spring Rated speed rpm : 300 rack travel mm : 5.10
Rated speed rpm : 800	Setting point w/out bumper spring Rated speed rpm : 300
Rated speed rpm : 800  Rack travel in mm : 0.50  Tolerance mm : +- 0.20	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : +- 0.20  governor spring	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : +- 0.20  governor spring pre-tension	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : +- 0.20  governor spring	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : + 0.10
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : +- 0.20  governor spring pre-tension	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 350
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 350
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 350 Tolerance 1/min : + 30
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure hPa : -	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 350
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : 40.10  rack travel mm : 2.00 Rated speed rpm : 350 Tolerance 1/min : + 30  TORQUE CONTROL
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure hPa : -	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 350 Tolerance 1/min : + 30
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 250.0	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : 40.10  rack travel mm : 2.00 Rated speed rpm : 350 Tolerance 1/min : 40  TORQUE CONTROL  Dimension a mm : 3.90
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 250.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : 40.10  rack travel mm : 2.00 Rated speed rpm : 350 Tolerance 1/min : 40  Torque Control  Dimension a mm : 3.90 Rated speed rpm : 900
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 250.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0	Setting point w/out bumper spring  Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 350 Tolerance 1/min : + 30  TORQUE CONTROL  Dimension a mm : 3.90 Rated speed rpm : 900 rack travel mm : 13.75 Tolerance mm : + 0.05
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 250.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed	Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : 40.10  rack travel mm : 2.00 Rated speed rpm : 350 Tolerance 1/min : 400  ToRQUE CONTROL  Dimension a mm : 3.90 Rated speed rpm : 900 rack travel mm : 13.75 Tolerance mm : 450
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 250.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance	Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 350 Tolerance 1/min : + 30  TORQUE CONTROL  Dimension a mm : 3.90 Rated speed rpm : 900 rack travel mm : 13.75 Tolerance mm : + 0.05  Rated speed rpm : 450 rack travel mm : 13.75
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 250.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : 40.10  rack travel mm : 2.00 Rated speed rpm : 350 Tolerance 1/min : 400  ToRQUE CONTROL  Dimension a mm : 3.90 Rated speed rpm : 900 rack travel mm : 13.75 Tolerance mm : 450
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 250.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance	Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : 40.10  rack travel mm : 2.00 Rated speed rpm : 350 Tolerance 1/min : + 30  TORQUE CONTROL  Dimension a mm : 3.90 Rated speed rpm : 900 rack travel mm : 13.75 Tolerance mm : + 0.05  Rated speed rpm : 450 rack travel mm : 13.75 Tolerance mm : + 0.05
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 250.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 300 rack travel mm : 5.10  Testing:  Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 350 Tolerance 1/min : + 30  TORQUE CONTROL  Dimension a mm : 3.90 Rated speed rpm : 900 rack travel mm : 13.75 Tolerance mm : + 0.05  Rated speed rpm : 450 rack travel mm : 13.75

Tolerance mm : +- 0.30

BREAKAWAY

Rack travel in mm : 12.70
Rated speed rpm : 945
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

## LOW IDLE

Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 03,04,96 : ISO 4113

Combination No. : 0 402 046 878

Injection pump

Pump designation : PES6P120A720RS3370 EP type number : 0 412 026 790

Governor

Governer design. : RQV300...1100PA1284K

Governer no. : 0 421 815 517

Cust. part No. :

Customer-spec, information

Customer : IVECO-FRANCE Motor : 8360.46.4106

Power KW : 176.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Overflow quantity

min. L/h : 160 Tolerance L/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 4.15 · +- 0.05 Tolerance mm

Check

: + 0.10tolerance mm

Rack travel in mm: 13.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Check

tolerance \*NW : +- 0.40

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 1100

	1	guide sleeve	
Rack travel in mm :	13.80	travel mm	: 13.50
Tolerance mm :	<b> 0.0</b> 5 <del> </del>	Tolerance mm	: +- 0.50
Del. quantity			
cm3/1000 strokes :	173.0	GUIDE SLEEVE POSI	TION
			477.8 M
Tolerance cm3/1000 strokes : →	- 1.0	Rated speed rpm	: 1325
CHENTOUR SCIONES . T	1.0	Rack travel in mm	: 10.00
Check tolerance		· Tolerance mm	: +- 2.70
cm3/1000s. : +	4.0 <del> </del>	·	
Spreed		FULL LOAD DELIVER	Y AT FULL LOAD STOP
Tolerance	<del>_</del>	•	
cm3/1000 strokes :	5.0	Rated speed rpm	: 1100
Check tolerance		Aneroid pressure hPa	: 1200
cm3/1000s. :	9.0	Del. quantity	. 1200
	<del></del>	cm3/1000 strokes	: 173.0
Rated speed rpm :	300	Tolerance cm3/1000 strokes	: + 1.0
Rack travel in mm :	7.90	Check tolerance	. + (.0
Tolerance mm : +	- 0.20	cm3/1000s.	: <del></del> 4.0
Del. quantity	35.0	Spireed	
cm3/1000 strokes : Tolerance	25.0	Tolerance cm3/1000 strokes	: 5.0
cm3/1000 strokes : +	- 3.0	Check tolerance	. 5.0
Check tolerance	· +	cm3/1000s.	: 9.0
cm3/1000s. : +	- 6.0		
Spreed Tolerance	1		
cm3/1000 strokes :	8.0	CONTROL LEVER	
Check tolerance	42.a		
cm3/1000s. :	12.0	control lever position degree	: 116.0
	1	tolerance degree	
(B) SETTING OF INJECT	TION PUMP	_	
WITH GOVERNOR	<u>†</u>	RATED SPEED	
		rack travel mm	: 12.80
GUIDE SLEEVE TRAVEL	+	Rated speed rpm	
Datad aroad arm	300	Tolerance 1/min	: +- 5
Rated speed rpm : guide sleeve	300	rack travel mm	: 4.00
travel mm :	2.68	Rated speed rpm	: 1265
Tolerance mm : +	- 0.20 +	Tolerance 1/min	: +- 15
Rated speed rpm :	1155	rack travel mm	: 0.50
guide sleeve	1,35	Tolerance mm	: +- 0.50
travel mm :	9.00 +	Rated speed rpm	: 1450
Tolerance mm : +	- 0.15		
Rated speed rpm :	385		
guide sleeve	+	LOW IDLE	
travel mm :	3.01		
Tolerance mm : +	- 0.25	control lever	
Rated speed rpm :	1450	position degree	: 79.0
·	+	tolerance degree	: +- 4.0

## Testing:

Rated speed rpm : 300 rack travel mm : 6.80 Tolerance mm : + 0.10

Rated speed rpm : 300

CRT mm min. : > 8.30

Rated speed rpm : 330

#### TORQUE CONTROL

Rated speed rpm : 1100 rack travel mm : 13.80 Tolerance mm : + 0.05

Rated speed rpm : 800 rack travel mm : 13.95 Tolerance mm : + 0.15

Rated speed rpm : 650 rack travel mm : 13.50 Tolerance mm : + 0.15

Rated speed rpm : 400 rack travel mm : 13.00 Tolerance mm : + 0.20

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 800
Pressure hPa : 1200
rack travel mm : 13.95
Tolerance mm : + 0.15

#### **MEASUREMENT**

Pressure hPa : Rated speed rpm : 800
rack travel mm : 10.95
Tolerance mm : + 0.20

Rated speed rpm : 800

Pressure hPa : 550 rack travel mm : 12.90 Tolerance mm : +- 0.20

Pressure hPa : 285 rack travel mm : 11.55 Tolerance mm : +- 0.05 START CUT-OUT

Rated speed rpm : > 180 Rated speed rpm : < 220

Check

speed 1/min : > 160 Check

speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 800 Del. quantity

cm3/1000 strokes : 187.0

Tolerance

cm3/1000s.

cm3/1000 strokes : +- 3.0 Check tolerance

: +-

Aneroid pressure

hPa : 1200 Rated speed rpm : 650 Del. quantity

cm3/1000 strokes : 175.0

Tolerance

cm3/1000 strokes : + 3.0 Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 84.0

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

#### BREAKAWAY

Rack travel in mm: 12.80
Rated speed rpm: 1145
Tolerance 1/min: +- 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 12.50 Tolerance mm : +-- 0.30

Del. quantity cm3/1000 strokes	;	80.0
Tolerance cm3/1000 strokes	; +-	15.0
Check tolerance cm3/1000s.	; +-	19.0

## LOW IDLE

Rated speed rpm rack travel mm	:	300 7.90
Tolerance mm Del. quantity	: +	0.20
cm3/1000 strokes	:	25.0
Tolerance		7.0
cm3/1000 strokes Check tolerance	; +-	3.0
cm3/1000s.	: +-	6.0
Spreed		
Tolerance cm3/1000 strokes Check tolerance	:	8.0
cm3/1000s.	:	12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.04.96 Test oil : ISO 4113

Combination No. : 0 402 046 879

Injection pump

Pump designation : PES6P120A320RS3284B

EP type number : 0 412 026 795

Governor

Governer design. : RQ275/1050PA999-3B

Governer no. : 0 421 801 809

Cust. part No. : 5119B\_\_\_\_

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 062045\_I/3B

Power KW : 173.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Toterance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.55
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 165.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

D		+
Spreed Tolerance cm3/1000 strokes	: 5.0	GUIDE SLEEVE POSITION
Check tolerance		Rated speed rpm : 600
cm3/1000s.	: 9.0	Rack travel in mm: 20.00 Tolerance mm: + 0.80
Rated speed rpm	: 275	<u> </u>
Rack travel in mo Tolerance mm	n: -6.40 :+- 0.20	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes Tolerance	: 18.0	Rated speed rpm : 700 Aneroid pressure hPa : 1000
cm3/1000 strokes Check tolerance	: + 2.0	Del. quantity  cm3/1000 strokes : 165.0
cm3/1000s. Spreed	: +- 5.0	Tolerance + cm3/1000 strokes : +- 1.0
Tolerance cm3/1000 strokes	: 8.0	Check tolerance + cm3/1000s. : +- 4.0
Check tolerance cm3/1000s.	: 12.0	Spreed Tolerance
		cm3/1000 strokes : 5.0 Check tolerance
(B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP	+ cm3/1000s. : 9.0
GUIDE SLEEVE TRAV	/EL	CONTROL LEVER
Rated speed rpm guide sleeve travel mm Tolerance mm	: 275 : 1.30 : + 0.20	control lever position degree : 270.0 tolerance degree : + 4.0  RATED SPEED
Rated speed rpm guide sleeve travel mm	: 1141 : 6.40	rack travel mm : -1.00 Rated speed rpm : 1122
Tolerance mm	: +- 0.15	+ Tolerance 1/min : +- 8
Rated speed rpm guide sleeve travel mm	: 1050 : 6.00 : +- 0.10	rack travel mm : -7.50 Rated speed rpm : 1225 Tolerance 1/min : + 15
Tolerance mm Rated speed rpm	: 369	rack travel mm : -11.00 Tolerance mm : +- 0.55
guide sleeve travel mm Tolerance mm	: 3.61 : +- 0.10	Rated speed rpm : 1350
Rated speed rpm	: 490	LOW IDLE
guide sleeve travel mm Tolerance mm	: 6.00 : +- 0.10	- control lever
Rated speed rpm	: 1340	position degree : 252.0 tolerance degree : + 4.0
guide sleeve travel mm Tolerance mm	: 11.50 : + 0.50	Testing:

Rated speed rpm	: 275	+
rack travel mm		Aneroid pressure
Tolerance mm	: +- G.10	hPa : 1000
		Rated speed rpm : 1050
rack travel mm	: -9.50	+ Del. quantity
Rated speed rpm		+ cm3/1000 strokes : 163.0
Tolerance 1/min		+ Tolerance
	, 25	+ cm3/1000 strokes : +- 3.0
Rated speed rpm	: 200	+ Check tolerance
The state of the s	. 200	+  cm3/1000s. : + 6.0
CRT mm max.	: < -5.00	
		Aneroid pressure
		+ hPa : -
TORQUE CONTROL		Rated speed rpm : 500
		Del. quantity
Rated speed rpm	: 700	+ cm3/1000 strokes : 108.0
Marsa speed (p.m		+ Tolerance
Rated speed rpm	: 1050	+ cm3/1000 strokes : + 1.0
Tolerance mm		Check tolerance
. w to : with the	. 5,,,5	+ cm3/1000s. : +- 4.0
ANEROID/ALTITUDE	•	
COMPENSATOR TEST		BREAKAWAY
		$\frac{1}{4}$
SETTING		→ Rack travel in mm: -1.00
		+ Rated speed rpm : 1122
Rated speed rpm	<b>:</b> 500	Tolerance 1/min : +- 8
Pressure hPa		1
		1
MEASUREMENT		
		+ STARTING FUEL DELIVERY
Pressure hPa	: -	
Rated speed rpm	: 500	Rated speed rpm : 100
rack travel mm		+ Del. quantity
Tolerance mm	: + 0.10	- cm3/1000 strokes : 160.0
		Tolerance
Duduul amusal was		+ cm3/1000 strokes : +- 15.0
KATEO SDEED COM	: 500	
Rated speed rpm	: 500	+ Check tolerance
		+ Check tolerance + cm3/1000s. : + 19.0
Pressure hPa	: 280	check tolerance cm3/1000s. : +- 19.0
Pressure hPa rack travel mm	: 280 : -0.55	
Pressure hPa	: 280	
Pressure hPa rack travel mm Tolerance mm	: 280 : -0.55 : + 0.20	
Pressure hPa rack travel mm Tolerance mm Pressure hPa	: 280 : -0.55 : +- 0.20 : 200	cm3/1000s. ; +- 19.0
Pressure hPa rack travel mm Tolerance mm Pressure hPa rack travel mm	: 280 : -0.55 : +- 0.20 : 200 : -1.05	
Pressure hPa rack travel mm Tolerance mm Pressure hPa	: 280 : -0.55 : +- 0.20 : 200	cm3/1000s. : +- 19.0  LOW IDLE
Pressure hPa rack travel mm Tolerance mm Pressure hPa rack travel mm	: 280 : -0.55 : +- 0.20 : 200 : -1.05	cm3/1000s. : +- 19.0  LOW IDLE  Rated speed rpm : 275
Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: 280 : -0.55 : +- 0.20 : 200 : -1.05	cm3/1000s. : +- 19.0  LOW IDLE  Rated speed rpm : 275  rack travel mm : -6.40
Pressure hPa rack travel mm Tolerance mm Pressure hPa rack travel mm	: 280 : -0.55 : +- 0.20 : 200 : -1.05	cm3/1000s. : +- 19.0  LOW IDLE  Rated speed rpm : 275  rack travel mm : -6.40 Tolerance mm : +- 0.20
Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: 280 : -0.55 : +- 0.20 : 200 : -1.05 : +- 0.05	cm3/1000s. : +- 19.0  LOW IDLE  Rated speed rpm : 275  rack travel mm : -6.40 Tolerance mm : +- 0.20 Del. quantity
Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT Rated speed rpm	: 280 : -0.55 : +- 0.20 : 200 : -1.05 : +- 0.05	
Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: 280 : -0.55 : +- 0.20 : 200 : -1.05 : +- 0.05	
Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT Rated speed rpm Rated speed rpm	: 280 : -0.55 : +- 0.20 : 200 : -1.05 : +- 0.05	
Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT Rated speed rpm Rated speed rpm Check	: 280 : -0.55 : + 0.20 : 200 : -1.05 : + 0.05	
Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT Rated speed rpm Rated speed rpm Check speed 1/min	: 280 : -0.55 : +- 0.20 : 200 : -1.05 : +- 0.05	Cm3/1000s. : +- 19.0  LOW IDLE  Rated speed rpm : 275  rack travel mm : -6.40  Tolerance mm : +- 0.20  Del. quantity  cm3/1000 strokes : 18.0  Tolerance  cm3/1000 strokes : +- 2.0  Check tolerance  cm3/1000s. : +- 5.0
Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT Rated speed rpm Rated speed rpm Check speed 1/min Check	: 280 : -0.55 : + 0.20 : 200 : -1.05 : + 0.05 : > 100 : < 195 : > 80	Cm3/1000s. : +- 19.0  LOW IDLE  Rated speed rpm : 275 rack travel mm : -6.40 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 5.0 Spreed
Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT Rated speed rpm Rated speed rpm Check speed 1/min	: 280 : -0.55 : + 0.20 : 200 : -1.05 : + 0.05	Cm3/1000s. : +- 19.0  LOW IDLE  Rated speed rpm : 275 rack travel mm : -6.40 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance
Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT  Rated speed rpm Rated speed rpm Check speed 1/min Check	: 280 : -0.55 : + 0.20 : 200 : -1.05 : + 0.05 : > 100 : < 195 : > 80	Cm3/1000s. : +- 19.0  LOW IDLE  Rated speed rpm : 275 rack travel mm : -6.40 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000 strokes : 8.0
Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT  Rated speed rpm Rated speed rpm Check speed 1/min Check	: 280 : -0.55 : + 0.20 : 200 : -1.05 : + 0.05 : > 100 : < 195 : > 80 : < 215	Cm3/1000s. : +- 19.0  LOW IDLE  Rated speed rpm : 275 rack travel mm : -6.40 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02,04.96 Edition Test oil : ISO 4113

Combination No. : 0 402 640 844

Injection pump

Pump designation : PE12P120A520LS7879

EP type number : 0 412 620 841

Governor

Governer design. : RQV350...1200PA1167

Governer no. : 0 421 814 107

Cust. part No. : 0250742402

Customer-spec. information Customer : MTU

Motor : 12v183-03 Power KW : 845.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1,3.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 150 Tolerance l/h : +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 4.05 : +- 0.05 Tolerance mm

Check

: **←** 0.10 tolerance mm

Rack travel in mm: 10.50 : +- 0.50 Tolerance mm

Firing order : 12-1-5-9-8

: - 3- 4- 11- 10 : - 2- 6- 7

: 0-45-60-105-120 Phasing

: -165-180-225-240

: -285-300-345

Tolerance : + 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.80

Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 310.0

	<del></del>	Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes	: + 1.0	Rated speed rpm : 620 guide sleeve
Check tolerance		travel mm : 3.89
cm3/1000s.	: +- 4.0	Tolerance mm : + 0.25
Spreed	+	Rated speed rpm : 1366
Tolerance	: 8.0	guide sleeve travel mm : 10.00
cm3/1000 strokes		travel mm : 10.00 Tolerance mm : +- 0.25
Check tolerance	+	
cm3/1000s.	: 12.0 +	Rated speed rpm : 1470
		guide sleeve
Rated speed rpm	: 350 +	travel mm : 11.50
Bart Arrivet de ma	T	Tolerance mm : +- 0.50
Rack travel in ma		
Tolerance mm	: + 0.50	CHINE OF THE DOCTTION
Del. quantity	. 20.0	GUIDE SLEEVE POSITION
cm3/1000 strokes	: 20.0	Dated around now . 1710
Tolerance	1 70	Rated speed rpm : 1310
cm3/1000 strokes	; +- 3.0	Rack travel in mm : 12.00
Check tolerance	: ← 6.0 <sup>‡</sup>	Tolerance mm : +- 1.30
cm3/1000S. Spreed	7	roterance nm : +- 1.50
Tolerance	T	
cm3/1000 strokes	: 10.0 I	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	· 10.0	TOLL LOAD DELIVERY AT FOLL LOAD STOP
cm3/1000s.	: 15.0	Rated speed rpm : 1200
CIIS/ 10003.	· '5.0	Aneroid pressure
	I	hPa : 2000
(B) SETTING OF IN	LIECTION PIMP	Del. quantity
WITH GOVERNOR	102011014 10111	cm3/1000 strokes : 310.0
WITH GOVERNOR	1	Tolerance
		cm3/1000 strokes : + 1.0
GUIDE SLEEVE TRAV	/FI \$\frac{1}{4}	Check tolerance
	1	cm3/1000s. : $+$ 4.0
Rated speed rpm	: 350	Spreed
guide sleeve	1	Tolerance
travel mm	: 1.53	cm3/1000 strokes : 8.0
Tolerance mm	: +- 0.15	Check tolerance
	<del>-</del>	cm3/1000s. : 12.0
Rated speed rpm	: 1281	
guide sleeve	+	
travel mm	: 8.53	
Tolerance mm	: +- 0.20 +	CONTROL LEVER
	+	
Rated speed rpm	: 990 +	control lever
guide sleeve	+	position degree : 122.0
travel mm	: 5.68	tolerance degree : +- 4.0
Tolerance mm	: +- 0.25	DATES OBEES
Made at a second const	. /20	RATED SPEED
Rated speed rpm	: 420 +	made disposal min and 44 00
guide sleeve	. 204	rack travel mm : 11.80
travel mm	: 2.86	Rated speed rpm : 1245 Tolerance 1/min : +- 5
Tolerance mm	: + 0.25	Tolerance 1/min : +- 5
Dated around are	: 470	rack travel mm : 4.00
Rated speed rpm	: 470	Rated speed rpm : 1330
guide sleeve travel mm	- 12 T	
CE GYEL HAN	• 4.62 4.	interance 1/min · +- 15
	: 3.42 +	Tolerance 1/min : +- 15
D06	: 3.42 +	Tolerance 1/min : +- 15

rack travel mm	: 0.75 : +- 0.75	Tolerance mm Pressure hPa	: +- 0.05
Tolerance mm Rated speed rpm	: 1470	ressure hra rack travel mm Tolerance mm	: 250 : 6.80 : + 0.10
FOM IDTE		Pressure hPa rack travel mm Tolerance mm	: 12.20
control lever position degree tolerance degree	: 68.0 : +- 4.0	Pressure hPa rack travel mm Tolerance mm	: 1200 : 10.70 : + 0.10
Testing:		START CUT-OUT	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 4.00 : + 0.10	Rated speed rpm Rated speed rpm	: > 240 : < 270
Rated speed rpm	: 250	Check speed 1/min	: > 220
CRT mm min.		+ Check + speed 1/min	
Rated speed rpm	: 450	<u> </u>	
TORQUE CONTROL		+ FUEL DELIVERY CHA	ARACTERISTICS
Rated speed rpm rack travel mm Tolerance mm	: 1200 : 12.80	+ Aneroid pressure + hPa + Rated speed rpm + Del. quantity	: 900 : 600
Rated speed rpm		+ cm3/1000 strokes + Tolerance	: 267.0
rack travel mm Tolerance mm	9.70 + 0.10	cm3/1000 strokes Check tolerance cm3/1000s.	
ANDROTE /ALTTUCE		<del>-</del> +	4.3
ANEROID/ALTITUDE COMPENSATOR TEST		+ Aneroid pressure + hPa + Rated speed rpm	: - : 500
SETTING		Del. quantity cm3/1000 strokes	: 121.0
Rated speed rpm	: 600	Tolerance cm3/1000 strokes	: + 1.0
Pressure hPa rack travel mm Tolerance mm	: 2000 : 12.70 : + 0.10	theck tolerance cm3/1000s. Spreed	: +- 4.0
MEASUREMENT		Tolerance cm3/1000 strokes	: 10.0
Pressure hPa Rated speed rpm	: - 600	+ Check tolerance - cm3/1000S.	: 15.0
rack travel mm Tolerance mm	: 5.90 : +- 0.15	BREAKAWAY	
Rated speed rpm	: 600	Post travel in an	. 11 08
Pressure hPa rack travel mm	: 600 : 9.20	Rack travel in mm Rated speed rpm Tolerance 1/min	: 1245

## STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity cm3/1000 strokes : 360.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. : + 19.0

## LOW IDLE

Rated speed rpm 350 4.00 rack travel mm : +- 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 20.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. 15.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29.03.96 Test oil : ISO 4113

Combination No. : 0 402 648 790

Injection pump

Pump designation : PE8P130A920/5LS7867

EP type number : 0 412 638 805

Governor

Governer design. : RQV400...1000PA1285

Governer no. : 0 421 814 177

Cust. part No.

Customer-spec. information

Customer : IVECO-FIAT : 8285.22.014

Power KW : 277.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 43
Tolerance °C : +- 2.5

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

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x inside diameter: 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.15 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.00 Tolerance mm : + 0.50

Firing order : 1-8-4-3-6 :-5-7-2

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : + 0.30

Check

tolerance "NW : +- 0.50

#### BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.25
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 188.0

- 1000 Ott 01(CO 1 10010

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

009

	_	L
Check tolerance cm3/1000s.	: 12.0	FULL LOAD DELIVERY AT FULL LOAD STOP
CHOT TOODS.	. 12.0	FUEL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	: 400	Rated speed rpm : 550 Aneroid pressure
Rack travel in m		- hPa : 900
Tolerance mm	: +- 0.20	- Del. quantity
Del. quantity		- cm3/1000 strokes : 188.0
cm3/1000 strokes	: 23.0	Tolerance
Tolerance cm3/1000 strokes	: +- 3.0	cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance	; 3.0	- cm3/1000s. : +- 4.0
cm3/1000s.	: +- 7.0	- Spreed
Spreed	1	- Tolerance
Tolerance	<u> </u>	- cm3/1000 strokes : 8.0
cm3/1000 strokes	: 6.0	- Check tolerance
Check tolerance	4	- cm3/1000s. : 12.0
cm3/1000s.	: 10.0	-
	•	_
(B) SETTING OF IT	NJECTION PUMP	- CONTROL LEVER
WITH GOVERNOR		- - control lever
		- control lever - position degree : 114.0
GUIDE SLEEVE TRAN	/EL I	- tolerance degree : +- 4.0
		-
Rated speed rpm	: 400	- RATED SPEED
guide sleeve	. 1.00	- rack travel mm : 9.20
travel mm Tolerance mm	: 1.90 + : + 0.20 +	- rack travel mm : 9.20 - Rated speed rpm : 1070
toterance min	: <del> 0.20</del>	- Rated speed rpm : 1070 - Tolerance 1/min : +- 5
Rated speed rpm	: 1080	· Ocerance minimi :
guide sleeve	. 1000	rack travel mm : 4.00
travel mm	: 8.57	- Rated speed rpm : 1155
Tolerance mm	: +- 0.15	Tolerance 1/min : + 15
	+	
Rated speed rpm	: 764 +	rack travel mm : 0.50
guide sleeve	†	Tolerance mm : + 0.50
travel mm	: 5.74	- Rated speed rpm : 1250
Tolerance mm	: + 0.25	•
Rated speed rpm	: 520	
guide sleeve	. 525	LOW IDLE
travel mm	: 3.66	•
Tolerance mm		
	+	control lever
Rated speed rpm	: 1320 <del> </del>	position degree : 65.0
guide sleeve	14.55	tolerance degree : +- 4.0
travel mm	: 11.50	Tankina
Tolerance mm	: ← 0.50	Testing:
		Rated speed rpm : 400
GUIDE SLEEVE POSI	TION	rack travel mm : 4.30
TAVE VEHEVE I OUT	1	Tolerance mm : +- 0.10
Rated speed rpm	: 1220	· · · · · · · · · · · · · · · · · · ·
,	+	Rated speed rpm : 300
Rack travel in mm	: 8.00 <del> </del>	
Toterance mm		CRT mm min. :> 5.80

Rated speed rpm	: 430	Check tolerance cm3/1000s. : +- 6.0
TORQUE CONTROL	+	Aneroid pressure
Rated speed rpm	: 550	hPa : - Rated speed rpm : 500
rack travel mm	: 10.25 <del> </del>	Del. quantity
Tolerance mm	: +- 0.05	cm3/1000 strokes : 157.0 Tolerance
Rated speed rpm	: 950 I	cm3/1000 strokes : +- 1.0
rack travel mm Tolerance mm	: 10.20	Check tolerance
Tolerance mm	: + 0.10	cm3/1000s. : +- 4.0
ANEROID/ALTITUDE COMPENSATOR TEST		BREAKAWAY
	Į	Rack travel in mm: 9.20
SETTING	+	Rated speed rpm : 1070
Rated speed rpm	. 500	Tolerance 1/min : +- 5
Pressure hPa	: 900 I	
rack travel mm	: 10.25	
Tolerance mm	: +- 0.05	STARTING FUEL DELIVERY
MEASUREMENT	Ţ	Rated speed rpm : 100
	+	Del. quantity
Pressure hPa	500	cm3/1000 strokes : 150.0 Tolerance
Rated speed rpm rack travel mm		cm3/1000 strokes : +- 15.0
Tolerance mm	•	Check tolerance
Ontad annual non	: 500	cm3/1000s. ; +- 19.0
Rated speed rpm	; 300	
Pressure hPa		
rack travel mm	9.60	LOW IDLE
Tolerance mm	: + 0.10	FOM TOPE
Pressure hPa	: 355	Rated speed rpm : 400
rack travel mm	: 10.05	rack travel mm : 4.30
Tolerance mm	: ← 0.05	Tolerance mm : +- 0.20 Del. quantity
		cm3/1000 strokes : 23.0
START CUT-OUT	+	Tolerance
Dadad parasi	+	cm3/1000 strokes : +- 3.0
Rated speed rpm	: > 100	Check tolerance cm3/1000s. : +- 7.0
Check	1	Spreed
speed 1/min	: > 80 +	Tolerance
		cm3/1000 strokes : 6.0 Check tolerance
FUEL DELIVERY CHA	RACTERISTICS	cm3/1000S. : 10.0
Aneroid pressure	<u> </u>	
hPa	: 900	
Rated speed rpm	: 950	
Del. quantity	: 185.0	
cm3/1000 strokes	; 103.0 +	
Tolerance	4-	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W480/...

Edition : 29.03.96 Test oil : ISO 4113

Combination No. : 0 402 795 204

Injection pump

Pump designation : PES5H120/720/3LS1004

: -1

EP type number : 0 412 725 204

Governor

Governer design. : RE33

Governer no. : 0 421 890 364

Cust. part No. : 51.111103-7538

Customer-spec. information

Customer : MAN

Motor : D 2865 LF 09

Power KW : 250.0

## TEST BENCH REQUIREMENTS

Inlet line : 4-unten

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 165 Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 10.00 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-3-5-4-2

Phasing : 0-72-144-216-288

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.50

Start of delivery blocking

Barrel no. :

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

Test with control rod in stop position
POSITION  Engine speed min-1: 0  Engine speed min-1: 0  Engine speed min-1: 0  Amplitude V : 1.4  Tolerance V : +/- 0.6  Check Check tolerance mm : 13.00  Check value (P, R and H pump)  Uact V : 1.700  CRT mm : 6.15 Tolerance mm : +/- 0.25  Check tolerance mm : +/- 0.30  Engine speed min-1: 600  Difference Amplitude to Amplitude to Amplitude to Amplitude V : max.1.4   Engine speed min-1: 600  Difference Amplitude to Amplitude to Amplitude V : max.1.4   Engine speed min-1: 600  Difference  (C) INJECTION PUMP WITH POSITIONER  TEST POINT V1  TEST POINT V1  Rated speed rpm : 750 Uact V : 3.3550 Prestroke solenoid Stroke mm : 10.00 Del. quantity cm3/1000 strokes : 332.0  Tolerance cm3/1000s : + 4.0  Spreed Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10  Check value (M pump)  Check value (M pump)  CRT mm : 5.50 Tolerance mm : +/- 0.25 Tolerance mm : +/- 0.25  FUEL DELIVERY CHARACTERISTICS  Prestroke solenoid Stroke mm : 1.450 Tolerance mm : +/- 0.25  FUEL DELIVERY CHARACTERISTICS  Prestroke solenoid Stroke mm : 1.450 Prestroke solenoid Stroke mm : 10.00 Del. quantity
Engine speed min-1: 0  Engine speed min-1: 0  Amplitude V : 1.4  Tolerance V : +/- 0.6  Check (P, R and H pump)  Uact V : 3.100 CRT mm : 13.00  Tolerance mm : +/- 0.05  Check tolerance mm : +/- 0.10  Check value (P, R and H pump)  Uact V : 1.700  CRT mm : 6.15  Tolerance mm : +/- 0.25  Check tolerance mm : +/- 0.30  Setting point (M pump)  Uact V : 3.100  CRT mm : 12.50  Tolerance mm : +/- 0.05  Check tolerance mm : +/- 0.05  Check tolerance mm : +/- 0.05  CRT mm : 12.50  Tolerance mm : +/- 0.05  Check tolerance mm : +/- 0.05  Check Tolerance mm : +/- 0.05  Check Tolerance mm : -/- 0.05  Check value (M pump)  GET mm : 5.50  Tolerance mm : -/- 0.25  PUEL DELIVERY CHARACTERISTICS  Prestroke solenoid Stroke mm : 10.00  Check value (M pump)  FUEL DELIVERY CHARACTERISTICS  Prestroke solenoid Stroke mm : 10.00  Check tolerance mm : -/- 0.25  Check Tolerance mm : -/- 0.25  CRT mm : 5.50  Tolerance mm : -/- 0.30  Prestroke solenoid Stroke mm : 10.00  Del. quantity  FUEL DELIVERY CHARACTERISTICS
Check
Check
CP, R and H pump)
Uact V : 3.100 CRT mm : 13.00 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10  Check value (P, R and H pump)  Uact V : 1.700 CRT mm : 6.15 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30  Setting point (M pump)  Uact V : 3.100 CRT mm : 12.50 Tolerance mm : +/- 0.05  Check tolerance mm : +/- 0.05  CRT mm : 12.50 Tolerance mm : +/- 0.05  CRT mm : 12.50 Tolerance mm : +/- 0.05  Check tolerance mm : +/- 0.05  Tolerance mm : +/- 0.05  Tolerance mm : -/- 0.10  Check value (M pump)  Uact V : 1.700 Check value (M pump)  Check value (M pump)  Uact V : 1.700 Check value (M pump)  Uact V : 1.700 Check value (M pump)  FUEL DELIVERY CHARACTERISTICS  Tolerance mm : -/- 0.25 Check Stroke mm : 10.00  Check tolerance cm3/1000s. : 4.0  Check solenoid Stroke solenoid Stroke mm : 750 Uact V : 1.450 Prestroke solenoid Stroke mm : 10.00  Del. quantity
Difference   CRT mm
Tolerance mm : +/- 0.05
Check tolerance mm : +/- 0.10  Check value (P, R and H pump)  Uact V : 1.700 CRT mm : 6.15 Rated speed rpm : 750 Uact V : 3.350 Prestroke solenoid Stroke mm : 10.00 Del. quantity cm3/1000 strokes : 332.0 Tolerance mm : +/- 0.30  Setting point (M pump)  Uact V : 3.100 CRT mm : 12.50 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance mm : +/- 0.05 Check tolerance cm3/1000 strokes : 5.0 Check tolerance
Check value (P, R and H pump)  Uact V : 1.700 CRT mm : 6.15 Tolerance mm : +/- 0.30  Setting point (M pump)  Uact V : 3.100 CRT mm : 12.50 Tolerance mm : +/- 0.05 CRT mm : 12.50 Tolerance mm : +/- 0.05  CRT mm : 12.50 Tolerance mm : +/- 0.10  CRT mm : 12.50 Tolerance mm : +/- 0.25  Check  Tolerance mm : +/- 0.30  CRT mm : 12.50 Tolerance mm : +/- 0.30  Check tolerance cm3/1000 strokes : 5.0 Check tolerance mm : +/- 0.10  Check tolerance Cm3/1000 strokes : 5.0 Check tolerance Cm3/1000 strokes : 5.0  Check tolerance Cm3/1000 strokes : 5.0  Check tolerance Cm3/1000 strokes : 5.0  Check tolerance Cm3/1000 strokes : 5.0  Check tolerance Cm3/1000 strokes : 5.0  Check tolerance Cm3/1000 strokes : 5.0  Check tolerance Cm3/1000 strokes : 5.0  Check tolerance Cm3/1000 strokes : 5.0  Check tolerance Cm3/1000 strokes : 5.0  Tolerance mm : +/- 0.10  Check tolerance Cm3/1000 strokes : 5.0  Check tolerance Cm3/1000 strokes : 5.0  Tolerance mm : +/- 0.10  Check tolerance Cm3/1000 strokes : 5.0  Tolerance mm : +/- 0.10  Check tolerance Cm3/1000 strokes : 5.0  Tolerance Cm3/1000 strokes : 1.0  T
Check value (P, R and H pump)  Uact V : 1.700 CRT mm : 6.15 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30  Setting point (M pump)  Uact V : 3.100 CRT mm : 12.50 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.05  CRT mm : 12.50 Tolerance mm : +/- 0.05 Check Tolerance mm : +/- 0.05 Check Tolerance mm : -/- 0.05 CRT mm : 12.50 Tolerance mm : +/- 0.05 Check value (M pump)  Check value (M pump)  Uact V : 1.700 Check value (M pump)  Check value (M pump)  Uact V : 1.700 CRT mm : 5.50 Tolerance mm : +/- 0.25 Check Check value (M pump)  Uact V : 1.700 CRT mm : 5.50 Tolerance mm : +/- 0.25 Check C
(P, R and H pump)  Uact V : 1.700 CRT mm : 6.15 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30  Setting point (M pump)  Uact V : 3.100 CRT mm : 12.50 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.05  CRT mm : 12.50 Tolerance mm : +/- 0.05 CRT mm : 12.50 Tolerance mm : +/- 0.05 CRT mm : 12.50 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.05 Tolerance c cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 Tolerance mm : +/- 0.05 Tolerance c cm3/1000 strokes : 5.0 Tolerance mm : +/- 0.10  Check value (M pump)  FUEL DELIVERY CHARACTERISTICS  Uact V : 1.700 CRT mm : 5.50 Tolerance mm : +/- 0.25 Check Check Check Tolerance mm : +/- 0.25 Tolerance mm : +/- 0.30  Prestroke solenoid Stroke mm : 10.00 Del. quantity
Uact V : 1.700 CRT mm : 6.15 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30  Setting point (M pump)  Uact V : 3.100 CRT mm : 12.50 Tolerance mm : +/- 0.05 Check tolerance Check tolerance mm : +/- 0.05 CRT mm : 12.50 Tolerance mm : +/- 0.05 Check tolerance Check Tolerance mm : +/- 0.05 Check Tolerance mm : +/- 0.05 Check tolerance Check Tolerance mm : +/- 0.05 Check tolerance Check Tolerance mm : +/- 0.10  Check tolerance Check toleranc
Uact V : 1.700 CRT mm : 6.15 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30  Setting point (M pump)  Uact V : 3.100 CRT mm : 12.50 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.05 Tolerance mm : -/- 0.05 Check tolerance mm : +/- 0.10  Check tolerance Check tolerance mm : +/- 0.10  Check value (M pump)  Check value (M pump)  Check value (M pump)  Check value (M pump)  FUEL DELIVERY CHARACTERISTICS  Vact V : 1.700 CRT mm : 5.50 Tolerance mm : +/- 0.25 Check Tolerance mm : -/- 0.25 Check Tolerance mm : -/- 0.25 CRT mm : 5.50 Tolerance mm : -/- 0.25 Tolerance mm : -/- 0.25 Tolerance mm : -/- 0.30  Check column : 10.00 Check
Uact V : 1.700 CRT mm : 6.15 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30  Setting point (M pump)  Uact V : 3.100 CRT mm : 12.50 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.05 Tolerance mm : -/- 0.05 Check tolerance mm : +/- 0.10  Check tolerance Check tolerance mm : +/- 0.10  Check value (M pump)  Check value (M pump)  Check value (M pump)  Check value (M pump)  FUEL DELIVERY CHARACTERISTICS  Vact V : 1.700 CRT mm : 5.50 Tolerance mm : +/- 0.25 Check Tolerance mm : -/- 0.25 Check Tolerance mm : -/- 0.25 CRT mm : 5.50 Tolerance mm : -/- 0.25 Tolerance mm : -/- 0.25 Tolerance mm : -/- 0.30  Check column : 10.00 Check
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
Uact V       : 1.700       + Rated speed rpm       : 750         CRT mm       : 5.50       + Uact V       : 1.450         Tolerance mm       : +/- 0.25       + Prestroke solenoid         Check       + Stroke mm       : 10.00         tolerance mm       : +/- 0.30       + Del. quantity
CRT mm : 5.50 + Uact V : 1.450  Tolerance mm : +/- 0.25 + Prestroke solenoid  Check + Stroke mm : 10.00  tolerance mm : +/- 0.30 + Del. quantity
Tolerance mm : +/- 0.25 + Prestroke solenoid Check + Stroke mm : 10.00 tolerance mm : +/- 0.30 + Del. quantity
Check + Stroke mm : 10.00 tolerance mm : +/- 0.30 + Del. quantity
+ cm3/1000 strokes : /2.0
· · · · · · · · · · · · · · · · · · ·
Stop position + Tolerance + cm3/1000 strokes : +- 4.0
Uact V : Value with + Check tolerance
deenergised adjusting magnet + cm3/1000s. : +- 8.0
and control rod in + Spreed
stop position. + Tolerance CRT mm : 0.75 + cm3/1000 strokes : 4.0
Tolerance mm : +/- 0.25 + Check tolerance
Check + cm3/1000s. : 8.0
tolerance mm : +/- 0.35 + Rated speed rpm : 1000
+ kated speed rom : "Hill
· · · · · · · · · · · · · · · · · · ·
+ Uact V : 3.290
HUact V: 3.290 ENGINE-SPEED SENSOR + Prestroke solenoid (All P and R pumps not + Stroke mm : 8.00
ENGINE-SPEED SENSOR + Uact V : 3.290  ENGINE-SPEED SENSOR + Prestroke solenoid

Tolerance	
cm3/1000 strokes	
Check tolerance	
cm3/1000s.	: +- 8.0
Datasi sasasi sas	. 500
Rated speed rpm	: 500 : 2,900
Uact V Prestroke solenoi	: 2.900
Stroke mm	· 9.20
Del. quantity	. 7,20
cm3/1000 strokes	: 303.0
Tolerance	. 303.0
cm3/1000 strokes	: +- 5.0
Check tolerance	
cm3/1000s.	: +- 9.0
Rated speed rpm	: 500
Uact V	: 2.100
Prestroke solenoi	d
Stroke mm	: 6.20
Del. quantity	Amm - 5
cm3/1000 strokes	: 172.0
Tolerance	: +- 8.0 : 500 : 2.900 d : 9.20 : 303.0 : +- 5.0 : +- 9.0 : 500 : 2.100 d : 6.20 : 172.0 : +- 4.0 : +- 8.0  : 300 : 1.500 : +- 0.060 : +- 0.080 d : 7.20 : 32.0
cm3/1000 strokes	: +- 4.0
Check tolerance	
cm3/1000s.	: ← 8.0
TEST POINT L1	
LEGI LOTIAL FL	
Rated speed rpm	: 300
Uact V	1.500
Tolerance Volt	: + 0.060
Check tolerance	
Volt	: + 0.080
Prestroke solenoi	d ·
Stroke mm	: 7.20
Del. quantity	
cm3/1000 strokes	: 32.0
Tolerance	
cm3/1000 strokes	: +- 3.0
Spreed	•
Tolerance	
cm3/1000 strokes	: + 3.0
STARTING FUEL DEL	TVFRY
OFFINE ATTO STOCKE VELO	
Rated speed rpm	: 100
Uact V	2.450
Prestroke solenoi	
Stroke mm	: 7.00
Del. quantity	
cm3/1000 strokes	: 178.0
Tolerance	
cm3/1000 strokes	: <b>←</b> 10.0
Check tolerance	
cm3/1000s.	: +- 14.0
End of toot	fication chast
End of test speci:	rication sheet

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29.03.96 Test oil : ISO 4113

Combination No. : 0 402 795 205

Injection pump

Pump designation : PES5H120/720/3LS1002

: -2

EP type number : 0 412 725 205

Governor

Governer design. : RE33

Governer no. : 0 421 890 362

Cust. part No. : 51.111103-7540

Customer-spec. information

Customer : MAN

Motor : D 2865 LUH 07

Power KW : 228.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4-unten

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 165 Tolerance L/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 10.00 Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-3-5-4-2

Phasing : 0-72-144-216-288

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.50

Start of delivery blocking

Barrel no. : 5

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION	Test with control rod in stop position
1.0071.1014	Engine speed min-1: 60
Engine speed min-1: 0	+ Amplitude V : 1.4
Setting point	+ Check
(P, R and H pump)	† tolerance V : +/- 1.20
Uact V : 3.100	Engine speed min-1: 600
CRT mm : 13.00	+ Difference
Tolerance mm : +/- 0.05	+ Amplitude to
Check tolerance mm : +/- 0.10	+ Amplitude V : max.1.4
tolerance mm : +/- 0.10	Ī
Check value	
(P, R and H pump)	(C) INJECTION PUMP WITH POSITIONER
	†
Uact V : 1.700	TEST POINT V1
Uact V : 1.700 CRT mm : 6.15	Rated speed rpm : 750
Tolerance mm : +/- 0.25	+ Uact V : 3.350
Check	+ Prestroke solenoid
tolerance mm : +/- 0.30	+ Stroke mm : 10.00
	Del. quantity
Setting point	+ cm3/1000 strokes : 332.0 + Tolerance
(M pump)	- cm3/1000 strokes : +- 1.0
CT Polity's	+ Check tolerance
Uact V : 3.100	+ cm3/1000s. : +- 4.0
CRT mm : 12.50	+ Spreed
Tolerance mm : +/- 0.05	+ Tolerance
Check : +/- 0.10	+ cm3/1000 strokes : 5.0 + Check tolerance
toterance mm : +/- U. (U	+ cm3/1000s. : 9.0
Check value	+ 31157 100001
(M pump)	+ FUEL DELIVERY CHARACTERISTICS
4.700	+ D. ( )
Uact V : 1.700 CRT mm : 5.50	+ Rated speed rpm : 750 + Uact V : 1.450
Tolerance mm : +/- 0.25	Prestroke solenoid
Check	+ Stroke mm : 10.00
tolerance mm : +/- 0.30	+ Del. quantity
	+ cm3/1000 strokes : 72.0
Stop position	+ Tolerance + cm3/1000 strokes : +- 4.0
Uact V : Value with	+ cm3/1000 strokes : +- 4.0 + Check tolerance
deenergised adjusting magnet	+ cm3/1000s. : + 8.0
and control rod in	+ Spreed
stop position.	Tolerance
CRT mm : 0.75	+ cm3/1000 strokes : 4.0
Tolerance mm : +/- 0.25 Check	+ Check tolerance + cm3/1000s. : 8.0
tolerance mm : +/- 0.35	T (11)37 TOUGS 8.0
occidence man	Rated speed rpm : 1000
	+ Uact V : 3.290
ENGINE-SPEED SENSOR	+ Prestroke solenoid
(ALL P and R pumps not	+ Stroke mm : 8.00
H and M pumps)	+ Del. quantity + cm3/1000 strokes : 311.0
	ליוויס פנו מאס אל ניוויס ביוויס

Tolerance cm3/1000 strokes	
Check tolerance	; — 4.0
cm3/1000s.	: <del>←</del> , 8.0
Rated speed rpm	: 500
Uact V	: 2.900
Prestroke solenoi Stroke mm	d : 9,20
Del. quantity	; 9.20
cm3/1000 strokes	: 303.0
Tolerance	
cm3/1000 strokes Check tolerance	: +- 5.0
cm3/1000s.	: +- 9.0
Bakada aa aa baaa	
Rated speed rpm Uact V	: 500 : 2.100
Prestroke solenoi	
Stroke mm	: 6.20
Del. quantity	. 172 0
cm3/1000 strokes Tolerance	: 1/2.0
cm3/1000 strokes	: +- 4.0
Check tolerance	
cm3/1000s.	: +- 8.0
TEST POINT L1	
Rated speed rpm	: 300
Uact V	: 1.500
Tolerance Volt	: +- 0.060
Check tolerance Volt	: +- 0.080
Prestroke solenoi	
Stroke mm	: 7.20
Del. quantity	. 72.0
cm3/1000 strokes Tolerance	: 32.0
cm3/1000 strokes	: +- 3.0
Spreed	
Tolerance cm3/1000 strokes	• + 30
CIID/ IUUU STIORES	
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
Uact V	: 2.450
Prestroke solenoid Stroke mm	d : 7.00
Stroke mm Del. quantity	
cm3/1000 strokes	: 178.0
Tolerance	40.0
cm3/1000 strokes	: +- 10.0
Check tolerance cm3/1000s.	: +- 14.0
	- 1110

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29,03,96 : ISO 4113 Test oil

Combination No. : 0 402 795 803

Injection pump

Pump designation : PES5P120A720/3LS7418

EP type number : 0 412 725 824

Governor

Governer design. : RE30

: 0 421 890 039 Governer no.

Cust. part No. : 51.11103-7511

Customer-spec. information

Customer : MAN

: D 2865 LF 24 Motor

Power KW : 213.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

2.0 Inlet press. bar : : + 0.1 Tolerance bar

Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

173.5 bar : + 1.5 Tolerance bar

Test lines : 1 680 750 089

D19

Outside diameter : 8.0

x inside diameter : 3.0

600 x length mm

REMARKS

Pump-specific values in Section (B)

must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 5.25

5.25 Prestroke mm : +- 0.05 Tolerance mm

Tolerance mm : + - 0.05

Check

tolerance mm : + - 0.10

Check

tolerance mm : + - 0.10

Rack travel in mm: 13.00

Rack travel in mm: 13.00 Tolerance mm :  $\leftarrow$  0.50

Tolerance mm : +- 0.50

Firing order : 1-3-5-4-2

Phasing : 0-72-144-216-288

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery blocking

5

Barrel no. :

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 VTESTING & SETTING RACK TRAVEL SENSOR POSITION Engine speed min-1: Setting point (P, R and H pump) Uact V 3.100 CRT mm 13.00 Tolerance mm : +/- 0.05 Check tolerance mm : +/- 0.10 Check value (P, R and H pump) Uact V 1.700 CRT mm 6.15 Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30 Setting point (amua M) 3.100 Uact V CRT mm 12.50 Tolerance mm : +/- 0.05Check : +/- 0.10 tolerance mm Check value (qmuq M) 1.700 Uact V 5.50 CRT mm : +/- 0.25 Tolerance mm Check : +/- 0.30tolerance mm Stop position : Value with Uact V deenergised adjusting magnet and control rod in stop position. 0.75 CRT mm

: +/- 0.25

: +/- 0.35

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps) Test with control rod in stop position Engine speed min-1: 60 Amplitude V 1.4 Tolerance V : +/- 0.6 Check tolerance V:  $\pm /-1.20$ Engine speed min-1: 600 Difference Amplitude to Amplitude V : max.1.4 (C) INJECTION PUMP WITH POSITIONER TEST POINT V1 Rated speed rpm 750 3.100 Uact V Del. quantity cm3/1000 strokes : 271.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 9.0 FUEL DELIVERY CHARACTERISTICS 1000 Rated speed rpm Uact V 3,120 Del. quantity cm3/1000 strokes : 252.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +- 6.0

750

1,470

83.0

5.0

9.0

:

: +-

Rated speed rom

Del. quantity

Check tolerance

cm3/1000 strokes :

cm3/1000 strokes : +-

Uact V

Tolerance

cm3/1000s.

Spreed

Check

Tolerance mm

tolerance mm

Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 8.0 : 12.0
Rated speed rpm Uact V Del. quantity	: 500 : 1.950
cm3/1000 strokes Tolerance	: 176.0
cm3/1000 strokes Check tolerance	: +- 4.0
cm3/1000s.	: +- 8.0
TEST POINT L1	
Rated speed rpm Uact V Tolerance Volt	: 325 : 1.470 : +- 0.060
Check tolerance Volt Del. quantity	: +- 0.080
cm3/1000 strokes Tolerance	: 40.0
cm3/1000 strokes Spreed Tolerance	: +- 3.0
cm3/1000 strokes	: <b>←</b> 3.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.03.96 Test oil : ISO 4113

Combination No. : 0 402 796 039

Injection pump

Pump designation : PES6H110/320RS13-1 EP type number : 0 412 716 004

Governor

Governer design. : RE36

Governer no. : 0 421 890 363

Cust. part No. : 51.11103-7529

Customer-spec. information

Customer : MAN

Motor : D0826 LF13/LFL09

Power KW : 191.0

## TEST BENCH REQUIREMENTS

Inlet line : 3-unten

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 165 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 8.00
Tolerance mm : + 0.50
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery blocking

Barrel no. : 1

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TECTING R RETTING DAGIC TRAVEL OFFICIAL	† Test with control rod
TESTING & SETTING RACK TRAVEL SENSOR POSITION	in stop position
LOSTITON	Engine speed min-1: 60
Engine speed min-1: 0	Amplitude V 1 4
Ligitic speed with the	Amplitude V : 1.4 Tolerance V : +/- 0.6
Setting point	T Check
(P, R and H pump)	tolerance V : +/- 1.20
(1) It dita is bailes	T coterance v . 17 1.20
Uact V : 3.100	↓ Engine speed min-1: 600
CRT mm : 13.00	+ Difference
Tolerance mm : +/- 0.05	+ Amplitude to
Check	+ Amplitude V : max.1.4
tolerance mm : +/- 0.10	+
	†
Check value	(a) This correct purpose the poor trailing
(P, R and H pump)	(C) INJECTION PUMP WITH POSITIONER
	TEST POINT V1
Uact V : 1.700	I LEST LOTINI AT
Uact V : 1.700 CRT mm : 6.15	Rated speed rpm : 850
Tolerance mm : +/- 0.25	+ Uact V : 2.490
Check	+ Prestroke solenoid
tolerance mm : +/- 0.30	+ Stroke mm : 11.10
	+ Del. quantity
	+ cm3/1000 strokes : 231.0
Setting point	† Tolerance
(mpump)	+ cm3/1000 strokes : +- 1.0
	+ Check tolerance
Uact V : 3.100	+ cm3/1000s. : + 4.0
CRT mm : 12.50	+ Spreed
Tolerance mm : +/- 0.05	+ Tolerance
Check	+ cm3/1000 strokes : 5.0
tolerance mm : +/- 0.10	+ Check tolerance
Charleman	+ cm3/1000s. : 9.0
Check value	FUEL DELIVERY CHARACTERISTICS
(dmuq M)	T FUEL DELIVERY CHARACTERISTICS
Uact V : 1.700	Rated speed rpm : 800
CRT mm : 5.50	+ Uact V : 1.580
Tolerance mm : +/- 0.25	+ Prestroke solenoid
Check	+ Stroke mm : 7.70
tolerance mm : +/- 0.30	+ Del. quantity
	+ cm3/1000 strokes : 92.0
Stop position	+ Tolerance
	+ cm3/1000 strokes : + 4.0
Uact V : Value with	+ Check tolerance
deenergised adjusting magnet	+ cm3/1000s. : + 8.0
and control rod in	+ Spreed + Tolerance
stop position. CRT mm : 0.75	+ cm3/1000 strokes : 4.0
Tolerance mm : +/- 0.25	Check tolerance
Check	+ cm3/1000s. : 7.0
tolerance mm : +/- 0.35	+
	Rated speed rpm : 1150
	+ Uact V : 2.440
ENGINE-SPEED SENSOR	+ Prestroke solenoid
(ALL P and R pumps not	+ Stroke mm : 9.30
H and M pumps)	+ Del. quantity
	+ cm3/1000 strokes : 206.0

Tolerance cm3/1000 strokes Check tolerance	: +- 6.0
m3/1000s.	: + 10.0
ated speed rpm act V	: 600 : 2.220
Prestroke solenoi Stroke mm	id : 12.10
pel. quantity m3/1000 strokes	: 211.0
Folerance cm3/1000 strokes	: +- 6.0
heck tolerance m3/1000s.	: +- 10.0
Rated speed rpm Jact V	: 500 : 1.750
Prestroke solenoi Stroke mm	d : 9.80
Del. quantity cm3/1000 strokes	: 113.0
Tolerance cm3/1000 strokes	; <del>+</del> 5.0
Check tolerance cm3/1000s.	: <b>←</b> 9.0
TEST POINT L1	
ated speed rpm act V olerance Volt heck tolerance	: 300 : 1.650 : +- 0.060
/olt Prestroke solenoi	
Stroke mm Del. quantity	: 11.10
m3/1000 strokes Tolerance	
m3/1000 strokes preed	: <del>←</del> 3.0
olerance m3/1000 strokes	: +- 3.0
TARTING FUEL DEL	IVERY
ated speed rpm	: 100 : 2.050
restroke solenoi	s 5.50
el. quantity m3/1000 strokes	: 82.0
olerance m3/1000 strokes	: +- 8.0
heck tolerance m3/1000s.	: +- 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 29.03.96 : ISO 4113

Combination No. : 0 402 796 040

Injection bumb

Pump designation : PES6H12O/32ORS10-1

EP type number : 0 412 726 009

Governor

Governer design. : RE36

Governer no.

: 0 421 890 363

Cust. part No. : 51.11103-7537

Customer-spec. information

Customer

: MAN

Motor

: D 0826 LUH 12

Power KW

: 162.0

TEST BENCH REQUIREMENTS

Inlet line : 3-unten

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 082

Inlet press. bar :

3.0

Tolerance bar : + 0.1

Overflow quantity

min. L/h

: 160

Tolerance 1/h

: +- 10.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Test lines : 1 680 750 089

Outside diameter :

8.0

x inside diameter :

3.0

x length mm :

600

REMARKS

Pump-specific values in Section (B)

must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : +- 1.0

Prestroke mm 8.00

Tolerance mm

: +- 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm: 10.50

Tolerance mm

: + 0.50

Firing order

: 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery blocking

Barrel no. :

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR	+ Test with control rod
POSITION	† in stop position
(001/10//	Engine speed min-1: 60
Engine speed min-1: 0	+ Amplitude V : 1.4
•	+ Amplitude V : 1.4 + Tolerance V : +/- 0.6
Setting point	+ Check
(P, R and H pump)	tolerance V : +/- 1.20
Uact V : 3.100	+ Engine speed min-1: 600
Uact V : 3.100 CRT mm : 13.00	+ Difference
Tolerance mm : +/- 0.05	+ Amplitude to
Check	+ Amplitude V : max.1.4
tolerance mm : +/- 0.10	†
Check value	†
(P, R and H pump)	(C) INJECTION PUMP WITH POSITIONER
(1) It dies it beings	+
	+ TEST POINT V1
Uact V : 1.700 CRT mm : 6.15	†
CRT mm : 6.15 Tolerance mm : +/- 0.25	+ Rated speed rpm : 800
Check	+ Uact V : 2.510 + Prestroke solenoid
tolerance mm : +/- 0.30	Stroke mm : 13.20
	+ Del. quantity
	+ cm3/1000 strokes : 222.0
Setting point	+ Tolerance
(M pump)	+ cm3/1000 strokes : +- 1.0
Uact V : 3.100	- Check tolerance - cm3/1000s. : +- 4.0
CRT mm : 12.50	Spreed
Tolerance mm : +/- 0.05	+ Tolerance
Check	+ cm3/1000 strokes : 5.0
tolerance mm : +/- 0.10	+ Check tolerance
Check value	+ cm3/1000s. : 9.0
(M pump)	FUEL DELIVERY CHARACTERISTICS
	+ COLE VEETVERY CHARACTERISTICS
Uact V : 1.700	+ Rated speed rpm : 800
CRT mm : 5.50	+ Uact V : 1.400
Tolerance mm : +/- 0.25	+ Prestroke solenoid + Stroke mm : 12.00
Check tolerance mm : +/- 0.30	+ Stroke mm : 12.00 + Del. quantity
total and in 17 or or	+ cm3/1000 strokes : 60.0
Stop position	+ Tolerance
	+ cm3/1000 strokes : +- 4.0
Uact V : Value with	+ Check tolerance + cm3/1000s. : +- 8.0
deenergised adjusting magnet and control rod in	+ Spreed
stop position.	Tolerance
CRT mm : 0.75	+ cm3/1000 strokes : 4.0
Tolerance mm : +/- 0.25	+ Check tolerance
Check	+ cm3/1000s. : 7.0
tolerance mm : +/- 0.35	+ Rated speed rpm : 1200
	+ Rated speed rpm : 1200 + Uact V : 2.540
ENGINE-SPEED SENSOR	Prestroke solenoid
(All P and R pumps not	+ Stroke mm : 10.30
H and M pumps)	+ Del. quantity
	+ cm3/1000 strokes : 209.0

Tolerance	
cm3/1000 strokes Check tolerance	: +- 6.0
cm3/1000s.	: +- 10.0
Rated speed rpm	: 500
Uact V	: 1.930
Prestroke solenoid Stroke mm	: 10.40
Del. quantity	
cm3/1000 strokes Tolerance	: 146.0
cm3/1000 strokes	: +- 4.0
Check tolerance cm3/1000s.	: + 8.0
TEST POINT L1	
Rated speed rpm	: 300
Uact V Tolerance Volt	: 1.440 : + 0.060
Check tolerance	n non
Volt Prestroke solenoid	: +- 0.080 !
Stroke mm	: 8.80
Del. quantity cm3/1000 strokes	: 17.0
Tolerance cm3/1000 strokes	: <del>+-</del> 3.0
Spreed	
Tolerance cm3/1000 strokes	: <del>+-</del> 3.0
STARTING FUEL DELI	VERY
Rated speed rpm	: 100
Uact V	: 2.100
Prestroke solenoid Stroke mm	: 7.20
Del. quantity	
cm3/1000 strokes Tolerance	: 104.0
cm3/1000 strokes	: +- 6.0
Check tolerance cm3/1000s.	: +- 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 29.03.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 796 204

Injection pump

Pump designation : PES6H120/720/3LS1005

: -1

EP type number : 0 412 726 204

Governor

Governer design. : RE33

: 0 421 890 364 Governer nc.

Cust. part No. : 51.111103-7539

Customer-spec. information

Customer : MAN

: D 2866 LF 16 Motor

Power KW : 294.0

#### TEST BENCH REQUIREMENTS

: 4-unten Inlet line

Test oil inlet

40 temp. °C Tolerance °C

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 135 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

#### BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : +- 1.0

: 10.00 Prestroke mm Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 : +- 0.50 Tolerance mm

: 6-2-4-1-5-: 3 Firing order

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.30

Check

tolerance \*NW : +- 0.50

Start of delivery blocking

Barrel no. :

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION	Test with control rod in stop position
	+ Engine speed min-1: 60
Engine speed min-1: 0	+ Amplitude V : 1.4
Setting point	+ Tolerance V : +/- 0.6 + Check
(P, R and H pump)	tolerance V : +/- 1.20
Uact V : 3.100	Engine speed min-1: 600
CRT mm : 13.00	Difference
Tolerance mm : +/- 0.05	+ Amplitude to
Check tolerance mm : +/- 0.10	+ Amplitude V : max.1.4
coterance mm : +/- 0.10	Ţ
Check value (P, R and H pump)	Engine speed min-1: 60 Amplitude V: 1.4 Tolerance V: +/- 0.6 Check tolerance V: +/- 1.20  Engine speed min-1: 600 Difference Amplitude to Amplitude V: max.1.4  (C) INJECTION PUMP WITH POSITIONER  TEST POINT V1  Rated speed rpm: 750 Uact V: 3.350 Prestroke solenoid Stroke mm: 10.00 Del. quantity cm3/1000 strokes: 332.0 Tolerance cm3/1000 strokes: +- 1.0 Check tolerance cm3/1000 strokes: 5.0 Spreed Tolerance cm3/1000 strokes: 5.0 Check tolerance
	TEOT DOTAIT III
Uact V : 1.700	TEST POINT V1
CRT mm : 6.15	Rated speed rpm : 750
Tolerance mm : +/- 0.25	+ Uact V : 3.350
Check	+ Prestroke solenoid
tolerance mm : +/- 0.30	+ Stroke mm : 10.00 + Del. quantity
	+ cm3/1000 strokes : 332.0
Setting point	+ Tolerance
(M pump)	+ cm3/1000 strokes : +- 1.0
11 14	Check tolerance
Uact V : 3.100 CRT mm : 12.50	+ cm3/1000s. : +- 4.0 + Spreed
Toterance mm : +/- 0.05	+ Tolerance
Check	+ cm3/1000 strokes : 5.0
tolerance mm : +/- 0.10	+ Check tolerance
Charle value	+ cm3/1000s. : 9.0
Check value (M pump)	FUEL DELIVERY CHARACTERISTICS
	- COLE DELIVERY GIARRO ENTOTION
Uact V : 1.700	+ Rated speed rpm : 750
CRT mm : 5.50	+ Uact V : 1.450
Tolerance mm : +/- 0.25 Check	+ Prestroke solenoid + Stroke mm : 10.00
tolerance mm : +/- 0.30	+ Del. quantity
COST GIVE THE	+ cm3/1000 strokes : 74.0
Stop position	Tolerance
W & W	+ cm3/1000 strokes : +- 4.0
Uact V : Value with deenergised adjusting magnet	← Check tolerance       ← cm3/1000s.
and control rod in	Spreed
stop position.	+ Tolerance
CRT mm : 0.75	+ cm3/1000 strokes : 4.0
Tolerance mm : +/- 0.25 Check	+ Check tolerance + cm3/1000s. : 8.0
tolerance mm : +/- 0.35	T 01107 1000000 . 0.0
The second secon	Rated speed rpm : 1000
	+ Uact V : 3.290
ENGINE-SPEED SENSOR	+ Prestroke solenoid
(All P and R pumps not H and M pumps)	+ Stroke mm : 8.00 + Del. quantity
n and n punips/	cm3/1000 strokes : 314.0
	1 Same to a contract to the contract

Tolerance cm3/1000 strokes Check tolerance	: +-	4.0	
cm3/1000s.	: +-	8.0	
Rated speed rpm	:	500	
Uact V		2.900	
Prestroke solenoi Stroke mm	7.	9,20	
Del. quantity	•	7.20	
cm3/1000 strokes Tolerance	:	307.0	
cm3/1000 strokes	: +-	5.0	
Check tolerance			
cm3/1000s.	: +-	9.0	
Rated speed rpm	:	500	
Uact V	:	2.100	
Prestroke solenoid	i t		
Stroke mm	:	6.20	
Del. quantity cm3/1000 strokes	:	176.0	
Tolerance	•	170.0	
cm3/1000 strokes	: +-	4.0	
Check tolerance		0.0	
cm3/1000s.	: +-	8.0	
TEST POINT L1			
Rated speed rpm	;	300	
Jact V	:	1.500	
Tolerance Volt	: +-	0.060	
Check tolerance			
Volt		0.080	
Prestroke solenoid Stroke mm	<b>1</b>	7.20	
Del. quantity	•	7.20	
cm3/1000 strokes	:	36.0	
Tolerance			
cm3/1000 strokes	: +-	3.0	
Spreed Tolerance			
cm3/1000 strokes	: +-	3.0	
STARTING FUEL DELI	VERY		
	4	100	
Rated speed rpm Jact V		100 2,450	
Prestroke solenoid	-	L, 770	
Stroke mm	:	7.00	
el. quantity			
m3/1000 strokes	:	183.0	
Tolerance		40.0	
cm3/1000 strokes	: +	10.0	
Check tolerance cm3/1000s.		14.0	
	•	14.0	

E02

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29.03.96 Test oil : ISO 4113

Combination No. : 0 402 796 205

Injection pump

Pump designation : PES6H120/720/3LS1006

: -1

EP type number : 0 412 726 205

Governor

Governer design. : RE33

Governer no. : 0 421 890 365

Cust. part No. : 51.111103-7541

Customer-spec. information Customer : MAN

Motor : D 2866 LUH 21

Power KW : 257.0

# TEST BENCH REQUIREMENTS

Inlet line : 4-unten

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 135 Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting.

Setting of constant delivery under Section C.

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 10.00 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50Tolerance mm : +- 0.50

Firing order : 6-2-4-1-5-

: 3

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.50

Start of delivery blocking

Barrel no. : 6

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TENTALO O OPTITALO DAGIS TRAVEL OFALOND	Test with control rod
TESTING & SETTING RACK TRAVEL SENSOR	† in stop position
POSITION	+ Engine speed min-1: 60
Engine speed min-1: 0	T Engine speed min-1: 00
Engine speed miller:	+ Amplitude V : 1.4 + Tolerance V : +/- 0.6
Setting point	+ Check
(P, R and H pump)	tolerance V : +/- 1.20
(1) It also it builds	I coterance v
Uact V : 3.100	+ Engine speed min-1: 600
CRT mm : 13.00	Difference
Tolerance mm : +/- 0.05	+ Amplitude to
Check	+ Amplitude V : max.1.4
tolerance mm : +/- 0.10	+
	+
Check value	
(P, R and H pump)	(C) INJECTION PUMP WITH POSITIONER
	+
	+ TEST POINT V1
Uact V : 1.700	†
CRT mm : 6.15	+ Rated speed rpm : 750
Tolerance mm : +/- 0.25	+ Uact V : 3.350
Check	+ Prestroke solenoid
tolerance mm : +/- 0.30	+ Stroke mm : 10.00
	+ Del. quantity
Setting point	+ cm3/1000 strokes : 332.0 + Tolerance
(M pump)	+ cm3/1000 strokes : +- 1.0
Co pulipy	Check tolerance
Uact V : 3.100	+ cm3/1000s. : +- 4.0
CRT mm : 12.50	+ Spreed
Tolerance mm : +/- 0.05	+ Tolerance
Check	+ cm3/1000 strokes : 5.0
tolerance mm : +/- 0.10	+ Check tolerance
	+ cm3/1000s. : 9.0
Check value	+
(M pump)	→ FUEL DELIVERY CHARACTERISTICS
• •	+
Uact V : 1.700	+ Rated speed rpm : 750
CRT mm : 5.50	+ Uact V : 1.450
Tolerance mm : +/- 0.25	+ Prestroke solenoid
Check	+ Stroke mm : 10.00
tolerance mm : +/- 0.30	+ Del. quantity
<b>0 1</b> 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	+ cm3/1000 strokes : 74.0
Stop position	+ Tolerance
Uact V : Value with	+ cm3/1000 strokes : +- 4.0 + Check tolerance
Uact V : Value with deenergised adjusting magnet	+ cm3/1000s. : + 8.0
and control rod in	Spreed
stop position.	+ Tolerance
CRT mm : 0.75	+ cm3/1000 strokes : 4.0
Tolerance mm : +/- 0.25	+ Check tolerance
Check	+ cm3/1000s. : 8.0
tolerance mm : +/- 0.35	+
	+ Rated speed rpm : 1000
	+ Uact V : 3.290
ENGINE-SPEED SENSOR	+ Prestroke solenoid
(All P and R pumps not	+ Stroke mm : 8.00
H and M pumps)	+ Del. quantity
	+ cm3/1000 strokes : 314.0

Tolerance cm3/1000 strokes	: +- 4.0
Check tolerance cm3/1000s.	: +- 8.0
Rated speed rpm Uact V	: 500 : 2.900
Prestroke solenoi Stroke mm	d : 9.20
Del. quantity cm3/1000 strokes	: 307.0
Tolerance cm3/1000 strokes	: <del>+</del> 5.0
Check tolerance cm3/1000s.	: +- 9.0
Rated speed rpm Uact V Prestroke solenoi	: 500 : 2.100
Stroke mm	<b>:</b> 6.20
Del. quantity cm3/1000 strokes Tolerance	: 176.0
cm3/1000 strokes Check tolerance	: +- 4.0
cm3/1000s.	: ← 8.0
TEST POINT L1	
Rated speed rpm Uact V Tolerance Volt Check tolerance	: + 4.0 : + 8.0 : 500 : 2.900 d : 9.20 : 307.0 : + 5.0 : + 9.0 : 500 : 2.100 d : 6.20 : 176.0 : + 4.0 : + 8.0 : 300 : + 8.0 : 4.0 : + 8.0 : 7.20 : 36.0
Volt Prestroke solenoic	: +- 0.080
Stroke mm Del. quantity	· 7.20
cm3/1000 strokes Tolerance	: 36.0
cm3/1000 strokes Spreed	: +- 3.0
Tolerance cm3/1000 strokes	: +- 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm Uact V Prestroke solenoid	: 100 : 2.450
Stroke mm Del. quantity	: 7.00
cm3/1000 strokes Tolerance	: 183.0
cm3/1000 strokes	: +- 10.0
Check tolerance cm3/1000s.	: + 14.0
End of test specia	fication sheet

E05

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 29,03,96

Test oil

: ISO 4113

Combination No.

: 0 402 796 822

Injection pump

Pump designation : PES6P120A720/3LS7417

EP type number

: 0 412 726 960

Governor

Governer design. : RE30

Governer no.

: 0 421 890 039

Cust. part No. : 51.11103-7480

Customer-spec. information

Customer

: MAN

Motor

: D 2866 LOH 25

Power KW

: 228.0

TEST BENCH REQUIREMENTS

Inlet line

: 4.1

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve : 1 417 413 047

Inlet press. bar :

2.0

Tolerance bar

0.1

Tolerance 1/h

: + 10.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

173.5

Tolerance bar

1.5

Test lines

: 1 680 750 089

E06

Outside diameter : 8.0

x inside diameter:

3.0

x length mm

600

**REMARKS** 

Pump-specific values in Section (B)

must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +-

: Prestroke mm 5.45

Prestroke mm 5,45

: +-Tolerance mm 0.05 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Check

tolerance mm : +- 0.10

Rack travel in mm: 15.50

Rack travel in mm: 15.50 Tolerance mm : + 0.50

: + 0.50Tolerance mm

: 6-2-4-1-5-: 3 Firing order

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

tolerance 'NW : + 0.75

Start of delivery blocking

Barrel no.

(B) POSITIONER TO Warm-up time: 3 on n=600 min-1, Uac	minutes at
TESTING & SETTING POSITION	S RACK TRAVEL SENSOR
Engine speed min-	-1: 0
Setting point (P, R and H pump)	)
Uact V CRT mm Tolerance mm Check	: 3.100 : 13.00 : +/- 0.05
tolerance mm Check value (P, R and H pump)	: +/- 0.10
Uact V CRT mm Tolerance mm Check tolerance mm	: 1.700 : 6.15 : +/- 0.25 : +/- 0.30
Setting point (M pump)	
Uact V CRT mm Tolerance mm Check tolerance mm	: 3.100 : 12.50 : +/- 0.05 : +/- 0.10
Check value (M pump)	
Uact V CRT mm Tolerance mm Check tolerance mm	: 1.700 : 5.50 : +/- 0.25 : +/- 0.30
Stop position	
Uact V deene	: Value with ergised adjusting magnet and control rod in stop position.
CRT mm Tolerance mm Check	: 0.75 : +/- 0.25

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps)

Test with control rod in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600

Difference Amplitude to

Amplitude V : max.1.4

### (C) INJECTION PUMP WITH POSITIONER

### TEST POINT V1

750 Rated speed rpm 3.100 Uact V Del. quantity cm3/1000 strokes : 271.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 9.0

### FUEL DELIVERY CHARACTERISTICS

1000 Rated speed rpm 3.120 Uact V Del. quantity cm3/1000 strokes : 252.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 750 Rated speed rpm Uact V 1.470 Del. quantity cm3/1000 strokes : 83.0 Tolerance cm3/1000 strokes : +-5.0 Check tolerance

9.0

Spreed

cm3/1000s.

E07

tolerance mm : +/-0.35

Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 8.0 : 12.0
Rated speed rpm Uact V Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 500 : 1.950 : 176.0 : + 4.0 : + 8.0
TEST POINT L1	
Rated speed rpm Uact V Tolerance Volt Check tolerance Volt Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Spreed Tolerance cm3/1000 strokes	: + 3.0

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 03,04,96 Test oil : ISO 4113 : 0 403 244 055 Combination No. Injection pump Pump designation : PES4MW100/320RS1521 : 0 413 204 020 EP type number Governor : RQV400...1200MW147 Governer design. : -1 : 0 420 083 336 Governer no. : 51.11103-7532 Cust. part No. Customer-spec. information Customer : MAN : D0824 LFL04 Motor : 81.0 Power KW TEST BENCH REQUIREMENTS Inlet line : 3.1 Test oil inlet temp. °C 40 Tolerance °C : 1 419 992 198 Overflow valve Inlet press. bar : 1.5 Test nozzle holde : 1 688 901 101 assembly Opening pressure 208.5 bar Tolerance bar : 1 680 750 008 Test lines

Outside diameter :

E09

8.0

x inside diameter: 2.0 600 x length mm : REMARKS (A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_ BEGINNING OF DELIVERY Test pressure bar : 31.0 Tolerance bar : +- 1.0 Prestroke mm 5.05 : + 0.05Tolerance mm Check : +- 0.10 tolerance mm Rack travel in mm: 10.50 : +- 1.50 Tolerance mm : 1-3-4-2 Firing order : 0-90-180-270 Phasing Tolerance : ← 0.50 Check : + 0.75tolerance °NW Start of delivery mark Barrel no. 1 : BASIC SETTING Rated speed rpm : 900 Rack travel in mm: 12.30 Tolerance mm : + - 0.05Del. quantity cm3/1000 strokes : 135.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. : +-4.0 Spreed

Tolerance cm3/1000 strokes	: 4.0	Tolerance mm : +- 2.70
Check tolerance	: 7.5	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	+	Rated speed rpm : 900 Aneroid pressure
Rack travel in mm	4.90	hPa : 800 Del. quantity
Tolerance mm Del. quantity	: +- 0.20	cm3/1000 strokes : 135.0 Tolerance
cm3/1000 strokes Tolerance	: 23.0	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes Check tolerance	: + 2.0	cm3/1000s. : +- 4.0 Spreed
cm3/1000s. Spreed	: +- 4.5	Tolerance cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes	: 3.5	Check tolerance cm3/1000s. : 7.5
Check tolerance cm3/1000s.	+	
	‡	CONTROL LEVER
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	control lever position degree : 121.0 tolerance degree : + 4.0
GUIDE SLEEVE TRAV	EL	RATED SPEED
Rated speed rpm guide sleeve	: 400	rack travel mm : 11.30
travel mm Tolerance mm	: 1.56 : + 0.20	Rated speed rpm : 1253 Tolerance 1/min : +- 5
Rated speed rpm guide sleeve	+	rack travel mm : 4.00 Rated speed rpm : 1335
travel mm Tolerance mm	: 9.98 : +- 0.15	rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm guide sleeve	: 868	Rated speed rpm : 1450
travel mm Tolerance mm	: 5.72 : + 0.25	
Rated speed rpm	: 560	LOW IDLE
guide sleeve travel mm	: 3.27	control lever
Tolerance mm	: + 0.25	position degree : 78.0 tolerance degree : +- 4.0
Rated speed rpm guide sleeve	: 1500	Testing:
travel mm Tolerance mm	: 13.50 : + 0.50	Rated speed rpm : 400 rack travel mm : 4.90 Tolerance mm : +- 0.10
GUIDE SLEEVE POSIT	FION	
Rated speed rpm	: 1350	Rated speed rpm : 300
Rack travel in mm	: 10.00	CRT mm min. :> 7.00

E10

		+ Tolerance
TORQUE CONTROL		
Rated speed rpm rack travel mm	: 12.30	cm3/1000s. : 9.0  Aneroid pressure
Tolerance mm		hPa : 800 Rated speed rpm : 650
Rated speed rpm rack travel mm Tolerance mm	: 12.30 : + 0.10	+ Del. quantity + cm3/1000 strokes : 141.0 + Tolerance
Rated speed rpm	: 650	cm3/1000 strokes : +- 2.0 Check tolerance
rack travel mm Tolerance mm	: 12.30 : ← 0.10	cm3/1000s. : +- 5.0
ANICOATO /AL TITUDE		Aneroid pressure hPa : - Rated speed rpm : 500
ANEROID/ALTITUDE COMPENSATOR TEST		+ Rated speed rpm : 500 + Del. quantity + cm3/1000 strokes : 93.0
SETTING		Tolerance cm3/1000 strokes : +- 1.0
Rated speed rpm Pressure hPa	: 500 · 1000	Check tolerance cm3/1000s. : + 3.0
rack travel mm Tolerance mm	: 12.30	BREAKAWAY
NEASUREMENT		Pools through in mr. s. 11 70
Pressure hPa Rated speed rpm Tolerance mm		Rack travel in mm: 11.30 Rated speed rpm: 1253 Tolerance 1/min: +- 5
Rated speed rpm	: 500	STARTING FUEL DELIVERY
Pressure hPa Pack travel mm	: 400 : 1.80	Rated speed rpm : 100
Tolerance mm		Del. quantity  + cm3/1000 strokes : 110.0
Pressure hPa Pack travel mm	: 130 : 0.30	Tolerance - cm3/1000 strokes : +- 5.0
olerance mm	: +- 0.10	Check tolerance cm3/1000s. : + 8.0
UEL DELIVERY CHA	ARACTERISTICS	
Aneroid pressure		LOW IDLE
Pa lated speed rpm	: 800 : 1200	Rated speed rpm : 400 rack travel mm : 4.90
el. quantity m3/1000 strokes	: 132.0	Tolerance mm : + 0.20  Del. quantity  cm3/1000 strokes : 23.0
olerance m3/1000 strokes heck tolerance	: + 2.0	+ CM3/1000 strokes : 23.0 + Tolerance + cm3/1000 strokes : +- 2.0
cm3/1000s. Spreed	: +- 5.0	Check tolerance cm3/1000s. : +- 4.5 Spreed

Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. : 3.5

5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 083 454

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...900A7C2209

: -1R

Governer no. : 9 420 083 232

Cust. part No. :

Customer—spec. information Customer : CUMMINS Motor : 6 CT 8.3

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

per varaco

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 3.50

### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.75 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes :

cm3/1000 strokes : 129.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

		,			
Spreed Tolerance cm3/1000 strokes	: 3.5	+	control lever position degree tolerance degree		108.0 4.0
Check tolerance cm3/1000s.	: 8.0	+	ASSEMBLY GOVERNOR	SETTI	[NG
Del. quantity cm3/1000 strokes Tolerance	: 18.5		Rated speed rpm rack travel mm	:	943 11.70
cm3/1000 strokes Check tolerance	: +- 2.0		Rated speed rpm Tolerance 1/min	: +-	979 2
cm3/1000s. Spreed	: +- 4.5	‡	rack travel mm	•	4.00
Tolerance cm3/1000 strokes	: 5.5	+ .	rack travel mm Tolerance mm		0.85
Check tolerance cm3/1000s.	; 9.0	+	Rated speed rpm Rated speed rpm	:	1100 944
(B) SETTING OF INJ	JECTION PUMP		rack travel mm	:	11.70
WITH GOVERNOR		+ .	Rated speed rpm Tolerance 1/min rack travel mm	: : +-	980 2 4.00
GUIDE SLEEVE POSIT	TION	1	rack travel mm	:	0.85
Rated speed rpm	: 800	•	Tolerance mm Rated speed rpm		0.55 1100
Rack travel in mm Tolerance mm	: 0.65 : +- 0.35		Rated speed rpm rack travel mm	:	945 11.70
governor spring pre-tension click setting x	: 5.25	+ 7	Rated speed rpm Tolerance 1/min rack travel mm	: +-	981 2 4.00
	' AT FULL LOAD STOP	+ 7	rack travel mm Tolerance mm Rated speed rpm	: : +-	0.85 0.55 1100
Rated speed rpm Aneroid pressure hPa	; 900 : -		Rated speed rpm rack travel mm	:	946 11.70
Del. quantity cm3/1000 strokes Tolerance	: 129.5		Rated speed rpm Tolerance 1/min	: +-	982 2
cm3/1000 strokes Check tolerance	: +- 1.0		rack travel mm	:	4.00
cm3/1000S. Spreed Tolerance	: +- 3.0	+ 7	rack travel mm Folerance mm Rated speed rpm		0.85 0.55 1100
cm3/1000 strokes Check tolerance cm3/1000S.	: 3.5 : 8.0		Rated speed rpm rack travel mm	:	947 11.70
		+	Rated speed rpm	•	983
CONTROL LEVER		<del>}</del> 7	Tolerance 1/min rack travel mm	: +-	2 4.00
		† r	rack travel mm	:	0.85

Tolerance mm	: +- 0.55
Rated speed rpm	: 1100
Rated speed rpm	: 948
rack travel mm	: 11.70
Rated speed rpm	: 984
Tolerance 1/min	: + 2
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1100

### LOW IDLE

control lever position degree : 77.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400 rack travel mm : 5.20

## Testing:

Rated speed rpm : 400 rack travel mm : 5.70 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 440
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

# TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 12.75 Tolerance mm : +- 0.05

Rated speed rpm : 550 rack travel mm : 12.80 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 14.30 Tolerance mm : +- 0.30

### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm3/1000 strokes : 142.0
Tolerance
cm3/1000 strokes : +- 8.0
Check tolerance
cm3/1000s. : +- 11.0

### LOW IDLE

Del. quantity
cm3/1000 strokes : 18.5
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000s. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000s. : 9.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 083 454DF

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...900A7c2209

: -1R

Governer no. : 9 420 083 232

Cust. part No. :

Customer—spec. information Customer : CUMMINS Motor : 6 CT 8.3

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. \*C : 40
Tolerance \*C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.15
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 101.5

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

		+			
Spreed Tolerance cm3/1000 strokes	3.5	<del> </del>	control lever position degree tolerance degree		
Check tolerance cm3/1000s.	6.0	 1	ASSEMBLY GOVERNOR	SETT	ING
Del. quantity cm3/1000 strokes Tolerance	18.5	<u> </u>	Rated speed rpm rack travel mm		943 10.10
cm3/1000 strokes : Check tolerance	<del>: +-</del> 2.0	‡	Rated speed rpm Tolerance 1/min	: +-	972 2
cm3/1000s.	+- 4.5	+	rack travel mm	:	4.00
Tolerance cm3/1000 strokes :	3.5	†	rack travel mm Tolerance mm		0.55
Check tolerance	<b>F</b> F	Ť	Rated speed rpm	:	1150
cm3/1000s.	5.5	Ī	Rated speed rpm rack travel mm	:	944 10.10
(B) SETTING OF INJE	CTION DUMD	T	I dev craver likil	•	10.10
WITH GOVERNOR	ECTION FORF	Ŧ	Rated speed rpm Tolerance 1/min rack travel mm	: +-	973 2 4.00
<del></del>		- +			
GUIDE SLEEVE POSITI	ON	+	rack travel mm	:	0.85
		+	Tolerance mm	: +-	0.55
Rated speed rpm :	800	‡	Rated speed rpm		1150
Rack travel in mm : Tolerance mm :		<u> </u>	Rated speed rpm rack travel mm	:	945 10.10
governor spring pre-tension click setting x :	5.25	<u> </u>	Rated speed rpm Tolerance 1/min rack travel mm	: : +- :	974 2 4.00
		_ 1	rack travel mm		0.85
FULL LOAD DELIVERY	AT FULL LOAD STOP	$\perp$	Tolerance mm	•	0.55
		Ţ	Rated speed rpm	:	1150
Rated speed rpm :	900	+			
Aneroid pressure		+	Rated speed rpm	:	946
hPa :	_	+	rack travel mm	•	10.10
Del. quantity		+		•	
cm3/1000 strokes :	101.5	1	Rated speed rpm	•	975
Tolerance	.0,15	1	Tolerance 1/min	• +	Ź
cm3/1000 strokes :	+- 0.5	1	rack travel mm		4.00
Check tolerance	. 0.5	1	ruck cravet min	•	4.00
cm3/1000s. :	<b>+</b> − 2.5	T	rack travel mm		n or
	<del></del> 2.5	T		•	0.85
Spreed		T	Tolerance mm		0.55
Tolerance		+	Rated speed rpm	:	1150
cm3/1000 strokes :	<b>3.</b> 5	+			
Check tolerance	_	+	Rated speed rpm	:	947
cm3/1000s. :	6.0	‡	rack travel mm	:	10.10
		1	Rated speed rpm	•	976
		. 1	Tolerance 1/min	: +-	2
CONTROL LEVER		$\Gamma$	rack travel mm	•	
CONTROL LEVER		Ţ	I AUN CLIAVEC MIT	•	4.00
		Ţ	rack travel mm	:	0.85

Tolerance mm	: +- 0.55
Rated speed rpm	: 1150
Rated speed rpm	: 948
rack travel mm	: 10.10
Rated speed rpm	: 977
Tolerance 1/min	: +- 2
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1150

#### LOW IDLE

control lever position degree : 78.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400 rack travel mm : 5.50

### Testing:

Rated speed rpm : 400 rack travel mm : 6.00 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 445
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

### TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 11.15 Tolerance mm : + 0.05

Rated speed rpm : 550 rack travel mm : 11.20 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 12.60 Tolerance mm : + 0.30

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 142.0 Tolerance cm3/1000 strokes : + 7.0 Check tolerance cm3/1000s. : + 10.0

#### LOW IDLE

Del. quantity cm3/1000 strokes : 18.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s.5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 083 454DG

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...900A7C2209

: -1R

Governer no. : 9 420 083 232

Cust. part No. :

Customer—spec. information Customer : CUMMINS Motor : 6 CT 8.3

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.75 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 129.5

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance cm3/1000s.

: +- 2.5

	,
Spreed	† control lever
Tolerance	position degree : 108.0
cm3/1000 strokes : 3.5	tolerance degree : +- 4.0
Check tolerance	<del>-</del>
cm3/1000s. : 6.0	+ ASSEMBLY GOVERNOR SETTING
Del. quantity	+ Rated speed rpm : 943
cm3/1000 strokes : 18.5	+ rack travel mm : 11.70
Tolerance cm3/1000 strokes : +- 2.0	Rated speed rpm : 979
Check tolerance	Tolerance 1/min : +- 2
cm3/1000s. : +- 4.5	rack travel mm : 4.00
Spreed Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 3.5	+ Tolerance mm : + 0.55
Check tolerance	+ Rated speed rpm : 1100
cm3/1000s. : 5.5	Rated speed rpm : 944
	rack travel mm : 11.70
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ Rated speed rpm : 980
WITH GOVERNOR	+ Rated speed rpm : 980 + Tolerance 1/min : +- 2
	rack travel mm : 4.00
GUIDE SLEEVE POSITION	rack travel mm : 0.85
doing observe a doi:1044	+ Tolerance mm : + 0.55
Rated speed rpm : 800	+ Rated speed rpm : 1100
Rack travel in mm : 0.65	+ Rated speed rpm : 945
Tolerance mm : +- 0.35	rack travel mm : 11.70
governor spring	+ Rated speed rpm : 981
pre-tension	+ Tolerance 1/min : + 2
click setting x : 5.25	+ rack travel mm : 4.00
	+ rack travel mm : 0.85
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.55
Rated speed rpm : 900	Rated speed rpm : 1100
Aneroid pressure	Rated speed rpm : 946
hPa : -	+ rack travel mm : 11.70
Del. quantity cm3/1000 strokes : 129.5	Rated speed rpm : 982
Tolerance	+ Tolerance 1/min : +- 2
cm3/1000 strokes : +- 0.5 Check tolerance	rack travel mm : 4.00
cm3/1000s. : +- 2.5	T rack travel mm : 0.85
Spreed	+ Tolerance mm : +- 0.55
Tolerance cm3/1000 strokes : 3.5	+ Rated speed rpm : 1100
Check tolerance	Rated speed rpm : 947
cm3/1000s. : 6.0	rack travel mm : 11.70
	+ Rated speed rpm : 983
	+ Tolerance 1/min : + 2
CONTROL LEVER	+ rack travel mm : 4.00
	Track travel mm : 0.85

Tolerance mm : +- 0.55 Rated speed rpm 1100 Rated speed rpm 948 rack travel mm 11.70 Rated speed rpm 984 : Tolerance 1/min 2 rack travel mm 4.00 0.85 rack travel mm : +- 0.55 Tolerance mm Rated speed rpm : 1100

#### LOW IDLE

control lever position degree : 78.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 400 rack travel mm : 5.50

### Testing:

Rated speed rpm : 400 rack travel mm : 6.00 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 445
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

### TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 12.75 Tolerance mm : + 0.05

Rated speed rpm : 550 rack travel mm : 12.80 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 14.30 Tolerance mm : + 0.30

### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 142.0
Tolerance
cm3/1000 strokes : + 7.0
Check tolerance
cm3/1000s. : + 10.0

### LOW IDLE

Del. quantity
cm3/1000 strokes : 18.5
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000s. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000s. : 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 083 454ED

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...900A7C2209

: -1R

: 9 420 083 232 Governer no.

Cust. part No. : 3355522-VERSA043

Customer-spec. information Customer : CUMMINS : 6 CT 8.3 Motor Power KW : 135.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

: 1 419 992 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0 x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar

Prestroke mm 2.85 Tolerance mm : +- 0.05 Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-5- 3- 6- 2-Firing order

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel 10.50 Tolerance mm : + 1.50 Difference \* CS 3.50

#### BASIC SETTING

720 Rated speed rpm

Rack travel in mm: 13.25 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 142.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s.3.0 : +-

Spreed		İ	control lever	
Tolerance		Ţ	position degree	: 95.0
cm3/1000 strokes	3.5	+	tolerance degree	
Check tolerance		1		
cm3/1000s.	: 8.0	I	ASSEMBLY GOVERNOR	SETTING
		+		
Del. quantity	: 11.0	+	Rated speed rpm	
cm3/1000 strokes Tolerance	: 11.0	I	rack travel mm	: 12.20
cm3/1000 strokes	: +- 2.0	+	Rated speed rpm	: 802
Check tolerance		+	Tolerance 1/min	
cm3/1000s. Spreed	: +- 4.5	1	rack travel mm	: 4.00
Tolerance		Ţ	rack travel mm	: 0.85
	: 5.5	+	Tolerance mm	: +- 0.55
Check tolerance cm3/1000s.	: 9.0	+	Rated speed rpm	: 900
CMS/ (OOUS.	: 9.0	I	Rated speed rpm	: 766
		+	rack travel mm	: 12.20
(B) SETTING OF INJ	ECTION PUMP	+		
WITH GOVERNOR		1	Rated speed rpm Tolerance 1/min	
		Ţ	rack travel mm	4.00
		+		
GUIDE SLEEVE POSIT	TON	†	rack travel mm Tolerance mm	: 0.85 : +- 0.55
Rated speed rpm	: 800	I	Rated speed rpm	: 900
•		+		
Rack travel in mm		+	Rated speed rpm rack travel mm	: 767 : 12.20
Tolerance mm	; +- 0.33	I	rack travet mm	: 12.20
governor spring		+	Rated speed rpm	: 804
pre-tension	: 4.50	†	Tolerance 1/min	
click setting x	; 4.50	I	rack travel mm	: 4.00
		+	rack travel mm	: 0.85
FULL LOAD DELIVERY	AT FULL LOAD STOP	+	Tolerance mm	: ← 0.55 : 900
Rated speed rpm	: 720	I	Rated speed rpm	: 900
Aneroid pressure		+	Rated speed rpm	: 768
hPa	-	+	rack travel mm	: 12.20
Del. quantity cm3/1000 strokes	: 142.0	I	Rated speed rpm	: 805
Tolerance	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	+	Tolerance 1/min	: +- 2
cm3/1000 strokes	: + 1.0	+	rack travel mm	: 4.00
Check tolerance cm3/1000s.	: + 3.0	İ	rack travel mm	: 0.85
Spreed	. +- 3.0	I	Tolerance mm	: +- 0.55
Tolerance		+	Rated speed rpm	: 900
	: 3.5	†	Dotod anned	: 769
Check tolerance cm3/1000s.	: 8.0	I	Rated speed rpm rack travel mm	: 769 : 12.20
J.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		+		
		+	Rated speed rpm	: 806
CONTROL LEVER		1	Tolerance 1/min rack travel mm	: +- 2 : 4.00
ANTERNA PEAPLY		+	. GOT GIGGE HAR	
		+	rack travel mm	: 0.85

Tolerance mm :  $\leftarrow$  0.55 770 Rated speed rpm rack travel mm 12.20 Rated speed rpm 807 Tolerance 1/min : + 4.00 rack travel mm rack travel mm 0.85 : + - 0.55Tolerance mm LOW IDLE control lever position degree : 75.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : rack travel mm : 4.00 Testing: Rated speed rpm 400 4.50 rack travel mm : + 0.10Tolerance mm 2.00 rack travel mm : Rated speed rpm Tolerance 1/min 30 100 Rated speed rpm

#### TORQUE CONTROL.

Tolerance mm

Rated speed rpm 13.25 rack travel mm : + 0.05Tolerance mm Rated speed rpm 550 13.30 rack travel mm : + 0.10Tolerance mm Rated speed rpm : 400 rack travel mm 14.90 : + 0.30

CRT mm min. : > 19.00

720

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 142.0 Tolerance cm3/1000 strokes : +- 8.0 Check tolerance cm3/1000s. : +- 11.0

#### LOW IDLE

Del. quantity cm3/1000 strokes : 11.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.03.96 Test oil : ISO 4113

Combination No. : 9 400 083 458

Injection pump

Pump designation : PES6A1000320/3RS2691

: -2

EP type number : 9 410 230 028

Governor

Governer design. : RQV350...1100AB1218

: -1R

Governer no. : 9 420 080 302

Cust. part No. : 3354617

Customer-spec. information Customer : CUMMINS Motor : 6 CT Power KW : 156.6

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter :

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05 Check tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : <del>+-</del> 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50 Difference CS : 1.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.65 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 118.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.	: +- 3.0	+ Rated speed rpm + Aneroid pressure + hPa	
Spreed		Del. quantity	: 800
Tolerance cm3/1000 strokes	3.5	+ cm3/1000 strokes + Tolerance	
Check tolerance		+ cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000s.	: 8.0	cm3/1000s.	: <del>←</del> 3.0
Del. quantity cm3/1000 strokes	: 15.0	Tolerance cm3/1000 strokes	: 3.5
Tolerance cm3/1000 strokes	: +- 2.0	+ Check tolerance + cm3/1000s.	: 8.0
Check tolerance cm3/1000s.	: +- 4.5	‡	
Spreed Tolerance		CONTROL LEVER	
cm3/1000 strokes Check tolerance		control lever	
cm3/1000s.	; 9.0	+ position degree	: 56.0
		tolerance degree	
(B) SETTING OF I	NJECTION PUMP	control lever	
WITH GOVERNOR		position degree	
		tolerance degree	: +- 4.0
GUIDE SLEEVE TRA	VEL	RATED SPEED	
Rated speed rpm	: 1150	rack travel mm	: 11.60
guide sleeve	7.00	+ Rated speed rpm	
travel mm Tolerance mm	: 7.00 : +- 0.10	† Tolerance 1/min	: <del>+-</del> 5
10010.100 11111		rack travel mm	: 4.00
Rated speed rpm	: 1400	Rated speed rpm	
guide sleeve	0.05	+ Tolerance 1/min	: +- 15
travel mm	: 8.95	†	. 0.50
Tolerance mm	: <del>+-</del> 0.25	+ rack travel mm + Tolerance mm	: 0.50 : +- 0.50
Rated speed rpm	: 350	+ Rated speed rpm	
guide sleeve		+ Added opeca i piii	1500
travel mm	: 1.65	+	
Tolerance mm	: + 0.25	+ LOW IDLE	
Rated speed rpm	: 650	T COM TOLE	
guide sleeve	. 050	1	
travel mm	: 4.45	control lever	
Tolerance mm	: +- 0.25	position degree tolerance degree	
GUIDE SLEEVE POST	ITION	control lever	
		<pre>position degree</pre>	
Rated speed rpm	: 1315	tolerance degree	: +- 4.0
Rack travel in mm		Testing:	
Tolerance mm	: +- 1.30	+	
		+ Rated speed rpm	: 350
PLATE 1 AAA A TO WALLEY		- + rack travel mm	: 5.90
FULL LOAD DELIVER	RY AT FULL LOAD STOP	+ Tolerance mm	: +- 0.10
		+	

<b>5</b>	400	1 Objects
Rated speed rpm	: 100	+ Check + speed 1/min :> 80
CRT mm min.	: > 9.00	+ Check
Rated speed rpm	: 425	speed 1/min : < 290
		- FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL		<b>+</b> ,
Debad amand man	. 4400	Aneroid pressure
Rated speed rpm rack travel mm		+ hPa : 800 + Rated speed rpm : 700
Tolerance mm	: + 0.05	Del. quantity
TOCCI GITCO TIKII	0.05	- cm3/1000 strokes : 133.0
Rated speed rpm	: 700	+ Tolerance
rack travel mm	: 13.65	+ cm3/1000 strokes : +- 2.0
Tolerance mm	: + 0.05	† Check tolerance
Datasi succed nam		+ cm3/1000s. : $+$ 4.0
Rated speed rpm	: 800 : 13.40	Aneroid pressure
rack travel mm Tolerance mm	: +- 0.10	hPa : 800
, Jeo. ai ioo iiiii	J - U. (U	+ Rated speed rpm : 800
Rated speed rpm	: 950	+ Del. quantity
rack travel mm	: 12.95	+ cm3/1000 strokes : 130.5
Tolerance mm	: + 0.15	+ Tolerance
		+ cm3/1000 strokes : +- 2.0 + Check tolerance
ANEROID/ALTITUDE		+ cm3/1000s. : +- 4.0
COMPENSATOR TEST		4.0
GOLII ELLONI OLL I EOL		Aneroid pressure
		+ hPa : -
SETTING		Rated speed rpm : 500
<b>.</b>	500	+ Del. quantity
Rated speed rpm	: 500 : 800	+ cm3/1000 strokes : 94.5 + Tolerance
Pressure hPa rack travel mm Tolerance mm	: 13.65	+ cm3/1000 strokes : +- 1.0
Tolerance mm	: + 0.05	+ Check tolerance
		+  cm3/1000s. : + 3.0
MEASUREMENT		<u> </u>
Pressure hPa	: -	BREAKAWAY
Rated speed rpm	: 500	+
rack travel mm		t Deal towns 20 as 34 40
Tolerance mm	: + 0.15	+ Rack travel in mm : 11.60 + Rated speed rpm : 1160
Rated speed rpm	: 500	+ Rated speed rpm : 1160 + Tolerance 1/min : + 5
waren sheen thus	. 200	Toccionos inititi.
Pressure hPa	: 500	+
rack travel mm	: 12.30	
Tolerance mm	: + 0.10	+ STARTING FUEL DELIVERY
Dunner LD:	. 400	Potent creat are 100
Pressure hPa rack travel mm	: 600 : 13.25	+ Rated speed rpm : 100 + rack travel mm : 20.00
Tolerance mm	: +- 0.05	Tolerance mm : +- 1.00
		+ Del. quantity
		+ cm3/1000 strokes : 170.0
START CUT-OUT		+ Tolerance
Bankari an mari	. > 400	+ cm3/1000 strokes : +- 8.0
Rated speed rpm		+ Check tolerance + cm3/1000s. : +- 11.0
Rated speed rpm	: < 270	T 511137 100003. TT 11.0
		1

# LOW IDLE

Del. quantity		45.0
cm3/1000 strokes	:	15.0
Tolerance		
cm3/1000 strokes	: +	5.0
Check tolerance		
cm3/1000s.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	•	5.5
Check tolerance		
cm3/1000s.	:	9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 083 458EA

Injection pump

Pump designation : PES6A100D320/3RS2691

: -2

EP type number : 9 410 230 028

Governor

Governer design. : RQV350...1100AB1218

: -1R

Governer no. : 9 420 080 302

Cust. part No. : 3354950-VERSA040

Customer—spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 102.0

Tolerance

cm3/1000 strokes : +- 1.0

. 1.0

Check tolerance		+ Rated speed rpm	
cm3/1000s.	: +- 3.0	+ Aneroid pressure	
		+ hPa	: 600
Spreed		+ Del. quantity	4
Tolerance		+ cm3/1000 strokes	: 102.0
cm3/1000 strokes	3.5	+ Tolerance	
		+ cm3/1000 strokes	
Check tolerance		† Check tolerance	
cm3/1000s.	: 8.0	+ cm3/1000s.	: <del></del> 3.0
		+ Spreed	
Del. quantity		+ Tolerance	
cm3/1000 strokes	: 15.0	+ cm3/1000 strokes	
Tolerance		+ Check tolerance	
cm3/1000 strokes	s : <del>+-</del> 2.0	+ cm3/1000s.	: 8.0
Check tolerance	. , , , , , , , , , , , , , , , , , , ,	†	
cm3/1000s.	: <del></del> 4.5	†	
Spreed		20117701 1 51177	
Tolerance		+ CONTROL LEVER	
cm3/1000 strokes		†	
Check tolerance		+ control lever	. 55 6
cm3/1000s.	: 9.0	+ position degree	: 22.0
		tolerance degree	: +- 4.0
(B) SETTING OF I	NIECTION DUMP	† control lever	
WITH GOVERNOR	MUECITON FORF	position degree	. 111 0
MILL GOVEKIANK		tolerance degree	
		T toterance degree	· +- 4.0
GUIDE SLEEVE TRA	VEI	RATED SPEED	
GOIDE OFFERE 11/1	VCC	1	
Rated speed rpm	: 1150	+ rack travel mm	: 10.70
guide sleeve	• ,,,,,,	+ Rated speed rpm	
travel mm	: 7.00	+ Tolerance 1/min	: +- 5
Tolerance mm		1	
		rack travel mm	: 4.00
Rated speed rpm	: 1400	+ Rated speed rpm	: 1335
guide sleeve		+ Tolerance 1/min	: +- 15
travel mm	: 8.95	+	
Tolerance mm	: ← 0.25	<pre>+ rack travel mm</pre>	: 0.50
		+ Tolerance mm	: ← 0.50
Rated speed rpm	: 350	+ Rated speed rpm	: 1500
guide sleeve		+	
travel mm	: 1.65	+	
Tolerance mm	: <del></del> 0.25	+	
		+ LOW IDLE	
Rated speed rpm	: 650	†	
guide sleeve	,	†	
travel mm	: 4.45	+ control lever	74.0
Tolerance mm	: +- 0.25	+ position degree	
		+ tolerance degree	: <del>←</del> 4.0
	T-T-ALI	†t	
GUIDE SLEEVE POS	ITION	+ control lever	. 45.0
	. 4745	position degree	
Rated speed rpm	: 1315	tolerance degree	: +- 4.0
Rack travel in mr	n · 16 50	Testing:	
Tolerance mm		T restring.	
interdiff um	. +- 1.50	T Rated speed rpm	: 350
		+ rack travel mm	
FULL LOAD DELTHE	RY AT FULL LOAD STOP	Tolerance mm	
LAFF FOWN DEFTACE	THE FULL EUMD STUP	I roter ance han	0.10
		T	

Rated speed rpm	: 700	+ Check
, ,		+ speed 1/min : > 80
CRT mm min.	: > 9.00	+ Check + speed 1/min : < 290
Rated speed rpm	: 425	<u>+</u>
TARAUE CONTROL		FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL		Aneroid pressure
Rated speed rpm	: 1100	+ hPa : 600
rack travel mm Tolerance mm	: 11.75	Rated speed rpm : 750
Tolerance mm	<b>:</b> +- 0.05	+ Del. quantity
Rated speed rpm	• 750	+ cm3/1000 strokes : 102.0 + Tolerance
rack travel mm	: 12.05	+ cm3/1000 strokes : +- 2.0
Tolerance mm		+ Check tolerance
		+  cm3/1000s. : +- 4.0
Rated speed rpm	: 870	+
rack travel mm Tolerance mm	: 12.05	+ Aneroid pressure
Tolerance mm	: +- 0.05	+ hPa : 600
Dated apost	: 1000	+ Rated speed rpm : 870 + Del. quantity
Rated speed rpm rack travel mm		+ cm3/1000 strokes : 104.0
Tolerance mm	: +- 0.05	+ Tolerance
TOCCI GITTO THE		+ cm3/1000 strokes : + 2.0
ANEROID/ALTITUDE COMPENSATOR TEST		+ cm3/1000s. : +- 4.0
		+ Aneroid pressure
		+ hPa : -
SETTING		Rated speed rpm : 500
Poted coad nom	: 500	+ Del. quantity + cm3/1000 strokes : 67.0
Rated speed rpm Pressure hPa	: 600	+ Tolerance
rack travel mm		+ cm3/1000 strokes : +- 1.0
Tolerance mm	: + 0.05	+ Check tolerance
		+ cm3/1000s. : +- 3.0
MEASUREMENT		
Pressure hPa	: -	BREAKAWAY
Rated speed rpm	: 500	+
rack travel mm	: 10.15	00010 100001 100000 100 700
Tolerance mm	: + 0.15	Rack travel in mm: 10.70
Rated speed rpm	: 500	+ Rated speed rpm : 1160 + Tolerance 1/min : +- 5
nacea speed chiii	. , ,	- Cocciano Dinti
Pressure hPa	: 430	+
rack travel mm		
Tolerance mm	: <del>+-</del> 0.10	STARTING FUEL DELIVERY
Pressure hPa	: 340	Rated speed rpm : 100
rack travel mm	10.65	
Tolerance mm	: <del> 0.05</del>	+ Tolerance mm : + 1.00
		+ Del. quantity
ATINE MIT ALE		
START CUT-OUT		<pre>f Tolerance</pre>
Rated speed rom	• > 100	theck tolerance
Rated speed rpm Rated speed rpm	: < 270	= cm3/1000s. : +- 11.0
nated opeca rpill		1

# LOW IDLE

Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000s. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 083 459

Injection pump

Pump designation : PES6A95D12ORS2822 EP type number : 9 400 084 029

Governor

Governer design. : RQV350...1250AB1235

: -2R

Governer no. : 9 420 080 311

Cust. part No. : 3355394

Customer—spec. information Customer : CUMMINS Motor : 6 BT Power KW : 119.3

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm: +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 2.50

### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.75 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 87.0

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

	+ Aneroid pressure
Spreed	+ hPa : 600
Tolerance	+ Del. quantity
cm3/1000 strokes : 3.5	+ cm3/1000 strokes : 87.0
	+ Tolerance
Check tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000s. : 8.0	+ Check tolerance
	+ cm3/1000s. : +- 3.0
Del. quantity	+ Spreed
cm3/1000 strokes : 17.0	+ Tolerance
Tolerance	+ cm3/1000 strokes : 3.5
cm3/1000 strokes : +- 2.0	+ Check tolerance
Check tolerance	+ cm3/1000s. : 8.0
cm3/1000s. : +- 4.5	†
Spreed	†
Tolerance	CONTROL LEVED
cm3/1000 strokes : 5.5	CONTROL LEVER
Check tolerance cm3/1000s. : 9.0	t control lever
cm3/1000S. : 9.0	position degree : 56.0
	tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP	T cotte ance degree . ' 4.0
WITH GOVERNOR	T control lever
Tractic GOV BUILTING	position degree : 111.0
	tolerance degree : + 4.0
GUIDE SLEEVE TRAVEL	+
	+ RATED SPEED
Rated speed rpm : 1300	+
guide sleeve	+ rack travel mm : 11.70
travel mm : 6.85	+ Rated speed rpm : 1315
Tolerance mm : +- 0.05	† Tolerance 1/min : + 5
	†
Rated speed rpm : 1550	+ rack travel mm : 4.00
guide sleeve	+ Rated speed rpm : 1560
travel mm : 8.55	Tolerance 1/min : + 15
Tolerance mm : + 0.25	T
Rated speed rpm : 350	+ rack travel mm : 0.50 + Tolerance mm : + 0.50
	+ Rated speed rpm : 1750
guide sleeve travel mm : 1.45	T kated speed (piii . 1750
Tolerance mm : + 0.25	I
roter drice half	
Rated speed rpm : 700	+ LOW IDLE
guide sleeve	+
travel mm : 4.25	+
Tolerance mm : + 0.25	+ control lever
	position degree : 69.0
	tolerance degree : + 4.0
GUIDE SLEEVE POSITION	†
	+ control lever
Rated speed rpm : 1530	position degree : 14.0
~	tolerance degree : +- 4.0
Rack travel in mm: 16.50	†
Tolerance mm : + 1.30	† Testing:
	Dated aread was a 750
CILL LOAD DELTHERY AT CILL LOAD OF	Rated speed rpm : 350  FOP + rack travel mm : 6.00
FULL LOAD DELIVERY AT FULL LOAD ST	TOP + rack travel mm : 6.00 + Tolerance mm : + 0.10
Rated speed rpm : 1250	T locerative limit . T 0.10
raced speed thin : 1000	Rated speed rpm : 100
	To udica specu (bill 1 100

CRT mm min.	· > 2.50	+ Del. quantity + cm3/1000 strokes : 81.5
CRI MIN MIN.	. > 0.30	+ Tolerance
Rated speed rpm	: 375	+ cm3/1000 strokes : +- 2.0
		+ Check tolerance + cm3/1000s. : +- 4.0
TORQUE CONTROL		+ 1.5
		+ Aneroid pressure
Rated speed rpm	: 1250	+ hPa : - + Rated speed rpm : 500
rack travel mm Tolerance mm	: +- 0.05	+ Rated Speed rpm : 300 + Del. quantity
		+ cm3/1000 strokes : 65.5
Rated speed rpm rack travel mm	: 700	+ Tolerance
Tolerance mm	: + 0.05	+ cm3/1000 strokes : +- 1.0 + Check tolerance
TO COT GETTO THE		+ cm3/1000s. : + 3.0
ANDROTO / AL TITUDE		+
ANEROID/ALTITUDE COMPENSATOR TEST		BREAKAWAY
SETTING		+ Rack travel in mm : 11.70
SELLTIAR		+ Rated speed rpm : 1315
Rated speed rpm		Tolerance 1/min : + 5
Pressure hPa		†
rack travel mm Tolerance mm		
TOCCI GITCE TIME	0.05	STARTING FUEL DELIVERY
MEASUREMENT		100
Pressure hPa	•	+ Rated speed rpm : 100 + rack travel mm : 20.00
Rated speed rpm	500	+ Tolerance mm : +- 1.00
But all and all mass	. 500	+ Del. quantity
Rated speed rpm	: 500	+ cm3/1000 strokes : 122.0 + Tolerance
Pressure hPa	: 410	+ cm3/1000 strokes : +- 8.0
rack travel mm	: 0.70	+ Check tolerance
Tolerance mm	: + 0.10	$\pm$ cm3/1000s. : +- 11.0
Pressure hPa	: 320	<del>-</del>
rack travel mm	: 0.15	†
Tolerance mm	: +- 0.05	LOW IDLE
	<del></del>	<del></del> +
START CUT-OUT		Del. quantity
Rated speed rpm	: > 100	+ cm3/1000 strokes : 17.0 + Tolerance
Rated speed rpm	: < 270	+ cm3/1000 strokes : +- 2.0
		Check tolerance
Check speed 1/min	; > 80	+ cm3/1000s. : +- 4.5 + Spreed
Check	. > 00	Tolerance
speed 1/min	: < 290	+ cm3/1000 strokes : 5.5
		+ Check tolerance + cm3/1000s. : 9.0
FUEL DELIVERY CHA	RACTERISTICS	1 (1107) 150000.
Aneroid pressure		1
hPa	: 600	+
Rated speed rpm	: 700	+

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08.04.96 : ISO 4113

Combination No. : 9 400 083 459FA

Injection pump

Pump designation : PES6A95D12ORS2822 EP type number : 9 400 084 029

Governor

Governer design. : RQV350...1250AB1235

: -2R

Governer no.

: 9 420 080 311

Cust. part No. : 3356014-VERSA0-50

Customer-spec. information : CUMMINS Customer Motor : 6 BT

Power KW

: 128.7

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance \*C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar : + 1.5 Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

F09

x inside diameter: 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm 2.80 : + - 0.05Tolerance mm

Check

: + 0.10tolerance mm

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

Beginning of delivery differende

and maximum rack

travel 10.50 travel Tolerance mm Difference °CS : 1.50

### BASIC SETTING

Rated speed rpm : 1300

13.75 Rack travel in mm: : + - 0.05Tolerance mm

Del. quantity

cm3/1000 strokes : 96.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3'1000s.

3.0 : +-

	+ Aneroid pressure
Spreed	+ hPa : 800
Tolerance	+ Del. quantity
cm3/1000 strokes : 3.5	+ cm3/1000 strokes : 96.5
	+ Tolerance
Check tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000s. : 8.0	+ Check tolerance
	+ cm3/1000s. : +- 3.0
Del. quantity	+ Spreed
cm3/1000 strokes : 18.5	+ Tolerance
Tolerance	+ cm3/1000 strokes : 3.5
cm3/1000 strokes : +- 2.0	+ Check tolerance
Check tolerance	+ cm3/1000s. : 8.0
cm3/1000s. : +- 4.5	+
Spreed	†
Tolerance	
cm3/1000 strokes : 5.5	+ CONTROL LEVER
Check tolerance	†
cm3/1000s. : 9.0	+ control lever
	+ position degree : 57.0
(B) SETTING OF INJECTION PUMP	tolerance degree : +- 4.0
WITH GOVERNOR	T control lever
WITH GOVERNOR	position degree : 112.0
	tolerance degree : + 4.0
GUIDE SLEEVE TRAVEL	T coterance degree 4.0
GOIDE SEECAE MAARE	RATED SPEED
Rated speed rpm : 1300	T WATER OF ECO
guide sleeve	rack travel mm : 12.70
travel mm : 6.85	+ Rated speed rpm : 1345
Tolerance mm : + 0.05	+ Tolerance 1/min : +- 5
Rated speed rpm : 1550	rack travel mm : 4.00
guide sleeve	+ Rated speed rpm : 1580
travel mm : 8.55	+ Tolerance 1/min : + 15
Tolerance mm : +- 0.25	+
	rack travel mm : 0.50
Rated speed rpm : 350	+ Tolerance mm : + 0.50
guide sleeve	+ Rated speed rpm : 1800
travel mm : 1.45	+
Tolerance mm : $\div$ 0.25	+
Rated speed rpm : 700	+ LOW IDLE
guide steeve	†
travel mm : 4.25	†
Tolerance mm : + 0.25	+ control lever
	<pre>position degree : 69.0 tolerance degree : +- 4.0</pre>
GUIDE SLEEVE POSITION	tolerance degree : +- 4.0
GOIDE SEEENE LOSTITON	T control lever
Rated speed rpm : 1530	position degree : 13.0
Nated speed (Mill + 1990	tolerance degree : +- 4.0
Rack travel in mm: 16.50	+ Coton and degree 1 - Tio
Tolerance mm : +- 1.30	Testing:
TO COLORING TO THE TAXABLE PARTY OF THE PART	+
	Rated speed rpm : 350
FULL LOAD DELIVERY AT FULL LOAD STOP	+ rack travel mm : 6.20
	+ Tolerance mm : + 0.10
Rated speed rpm : 1300	+
The state of the s	+ Rated speed rpm : 100
	·

		1 Dol guantitu
CRT mm min.	: > 8.50	Del. quantity cm3/1000 strokes : 95.0
Rated speed rpm	. 375	+ Tolerance + cm3/1000 strokes : +- 2.0
nated speed (pill	. 3.3	- Check tolerance
		- + cm3/1000s. : +- 4.0
TORQUE CONTROL		†
Dadad assad sas	. 4700	Aneroid pressure
Rated speed rpm	: 1300 : 13.75	+ hPa : - Rated speed rpm : 500
rack travel mm Tolerance mm	: +- 0.05	Del. quantity
TO COT CITYON THE		+ cm3/1000 strokes : 65.5
Rated speed rpm	: 800	+ Tolerance
rack travel mm	: 13.75	+ cm3/1000 strokes : +- 1.0
Tolerance mm	: + 0.05	Check tolerance
		cm3/1000s. : +- 3.0
ANEROID/ALTITUDE		
COMPENSATOR TEST		BREAKAWAY
		+
OFTTAIO		t Dool traval to as a 42.70
SETTING		+ Rack travel in mm : 12.70 + Rated speed rpm : 1345
Rated speed rpm	: 500	+ Rated speed rpm : 1345 + Tolerance 1/min : + 5
Pressure hPa		Totalia (7 mill)
rack travel mm		4
Tolerance mm	: <del></del> 0.05	
		+ STARTING FUEL DELIVERY
MEASUREMENT		Rated speed rpm : 100
Pressure hPa	• -	+ Rated speed rpm : 100 + rack travel mm : 20.00
Rated speed rpm	500	Tolerance mm : + 1.00
ratea opeca rpm	. 300	Del. quantity
Rated speed rpm	: 500	+ cm3/1000 strokes : 127.0
_		+ Tolerance
Pressure hPa		+ cm3/1000 strokes : + 8.0
rack travel mm	: 1.55 : + 0.15	+ Check tolerance + cm3/1000s. :+- 11.0
Tolerance mm	: 0.15	T CIII37 10005. : +- 11.0
Pressure hPa	: 350	I
rack travel mm	: 0.50	+
Tolerance mm	: + 0.10	
		+ LOW IDLE
START CUT-OUT		Del. quantity
SIAKI CUITOUI		+ cm3/1000 strokes : 18.5
Rated speed rpm	: > 100	+ Tolerance
Rated speed rpm		+ cm3/1000 strokes : +- 2.0
•		+ Check tolerance
Check	. 00	+  cm3/1000s. : + 4.5
speed 1/min	: > 80	+ Spreed
Check speed 1/min	: < 290	+ Tolerance + cm3/1000 strokes : 5.5
apecu (/(8)()	. ` 270	Check tolerance
		- + cm3/1000s. : 9.0
FUEL DELIVERY CHA	ARACTERISTICS	‡
Aneroid pressure		+
hPa	: 800	+
Rated speed rpm	: 800	

End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 08.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 085 224

Injection pump

Pump designation : PES6A90D320RS2605 EP type number : 9 400 083 078

Governor

Governer design. : RSV350...1050A1C2029

: -2R

: 9 420 083 266 Governer no.

Cust. part No. :

Customer-spec. information : MWM Customer

: TD 229-6 Motor

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 Tolerance bar

: 1 680 750 003 Test lines

Outside diameter : 6.0 x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 2.25 : +- 0.05 Tolerance mm

Check

tolerance mm : + - 0.10

Rack travel in mm : 10.50 : +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

travel 10.50 Tolerance mm : +- 1.50 Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 8.25 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 53.5

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance

cm3/1000s. : +- 2.5

	+
Spreed	+ control lever
Tolerance	+ position degree : 62.0
cm3/1000 strokes : 3.0	+ tolerance degree : +- 4.0
	†
Check tolerance	+ control lever
cm3/1000s. : 7.0	+ position degree : 112.0
No.1 minored 24.	tolerance degree : +- 4.0
Del. quantity cm3/1000 strokes : 9.5	RATED SPEED
Tolerance	I RATED SPEED
cm3/1000 strokes : + 2.0	+ rack travel mm : 7.20
Check tolerance	+ Rated speed rpm : 1075
cm3/1000s. : +- 4.0	+ Tolerance 1/min : +- 5
Spreed	+
Tolerance	+ rack travel mm : 4.00
cm3/1000 strokes : 4.5	+ Rated speed rpm : 1105
Check tolerance	+ Tolerance 1/min : +- 15
cm3/1000s. : 7.0	rack travel mm : 1.00
	+ Tolerance mm : + 0.70
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 1250
WITH GOVERNOR	T Mateu speed (pill : 1230
WITH GOVERNOR	1
	+ LOW IDLE
GUIDE SLEEVE POSITION	+
	+
Rated speed rpm : 800	+ control lever
Book Association was a COVE	position degree : 83.0
Rack travel in mm : 0.65 Tolerance mm : + 0.35	tolerance degree : +- 4.0
Tolerance mm : ← 0.35	+ control lever
governor spring	position degree : 33.0
pre-tension	tolerance degree : + 4.0
click setting x : 6.25	
	Setting point w/out bumper spring
	+
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Rated speed rpm : 350
4050	† rack travel mm : 6.00
Rated speed rpm : 1050	Tootings
Aneroid pressure hPa : -	+ Testing:
hPa : — Del. quantity	Rated speed rpm : 350
cm3/1000 strokes : 53.5	rack travel mm : 6.50
Tolerance	Tolerance mm : + 0.10
cm3/1000 strokes : +- 0.5	1
Check tolerance	rack travel mm : 2.00
cm3/1000s. : + 2.5	Rated speed rpm : 555
Spreed	Tolerance 1/min : +- 30
Tolerance	7 224 24 29 224 29 2
cm3/1000 strokes : 3.0	Rated speed rpm : 100
Check tolerance cm3/1000s. : 7.0	CRT mm min. :> 19.00
cm3/1000s. : 7.0	
	TORQUE CONTROL
CONTROL LEVER	+
	Rated speed rpm : 1050
•	rack travel mm : 8.25

Tolerance mm	: <b>←</b> 0.05
Rated speed rpm	; 500
rack travel mm	; 9.05
Tolerance mm	; + 0.05
Rated speed rpm	: 700
rack travel mm	: 9.00
Tolerance mm	: + 0.10
Rated speed rpm	: 875
rack travel mm	: 8.55
Tolerance mm	: + 0.15

Del. quantity		
cm3/1000 strokes	:	9.5
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		, 0
cm3/1000s.	: +	4.0
Spreed Tolerance		
cm3/1000 strokes		4.5
Check tolerance	•	4.7
cm3/1000s.	•	7.0
CIID/ 10000:	•	1.0

End of test specification sheet

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure	
hPa	-
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 48.0
cm3/1000 strokes Check tolerance	: + 1.5
cm3/1000s.	: <del></del> 3.5
Aneroid pressure	
hPa	; -
Rated speed rpm Del. quantity	: 700
cm3/1000 strokes Tolerance	: 52.5
cm3/1000 strokes Check tolerance	: +- 1.5
cm3/1000s.	: +- 3.5

# BREAKAWAY

Rack travel in mm	:	7.20
Rated speed rpm	:	1075
Tolerance 1/min	:	<b>←</b> 5

# STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		20.00
Tolerance mm	:	+-	1.00

# LOW IDLE

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 239

Injection pump

Pump designation : PES6A90D32ORS2701 EP type number : 9 400 083 094

Governor

Governer design. : RSV350...1150A2C2097

: -1R

Governer no. : 9 420 083 267

Cust. part No. :

Customer-spec. information Customer : MWM Motor : TD229-6 Power KW : 106.7

TEST BENCH REQUIREMENTS

LEDI DEMON VEGOTVENEMO

Test oil inlet

Inlet line

temp. \*C : 40
Tolerance \*C : + 2.0

Overflow valve : 1 419 992 198

: 3.1

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.70
Tolerance mm : + 0.05
Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 4.50

### BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 10.85 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes :

cm3/1000 strokes : 81.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : +- 2.5

	1
Spreed Tolerance	control lever position degree : 95.0
cm3/1000 strokes : 3.0	tolerance degree : + 4.0
Check tolerance cm3/1000s. : 7.0	+ RATED SPEED + rack travel mm : 9.80
Del. quantity cm3/1000 strokes : 11.5 Tolerance	Rated speed rpm : 1200 Tolerance 1/min : + 5
cm3/1000 strokes : +- 2.0 Check tolerance	rack travel mm : 4.00
cm3/1000s. : +- 4.0 Spreed	+ Rated speed rpm : 1255 + Tolerance 1/min : + 15
Tolerance cm3/1000 strokes : 4.5	rack travel mm : 1.00 Tolerance mm : + 0.70
Check tolerance cm3/1000s. : 7.0	+ Rated speed rpm : 1400
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
	t control lever
GUIDE SLEEVE POSITION	+ position degree : 70.0 + tolerance degree : + 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm : 0.65 Tolerance mm : + 0.35	Rated speed rpm : 350 rack travel mm : 5.50
governor spring pre-tension	Testing:
click setting x : 3.50	Rated speed rpm : 350 rack travel mm : 6.00
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Tolerance mm : + 0.10
Rated speed rpm : 1150 Aneroid pressure hPa : -	rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30
Del. quantity cm3/1000 strokes : 81.5	Rated speed rpm : 100
Tolerance cm3/1000 strokes : +- 0.5	CRT mm min. : > 19.00
Check tolerance cm3/1000s. : + 2.5	TORQUE CONTROL
Spreed	+
Tolerance cm3/1000 strokes : 3.0 Check tolerance	+ Rated speed rpm : 1150 + rack travel mm : 10.85 + Tolerance mm : + 0.05
cm3/1000s. : 7.0	Rated speed rpm : 500
	rack travel mm : 11.45 Tolerance mm : + 0.05
CONTROL LEVER	+
	+ Rated speed rpm : 750 + rack travel mm : 11.25

Tolerance mm	: +- 0.05	
Rated speed rpm rack travel mm Tolerance mm	: 850 : 11.05 : +- 0.05	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm	RACTERISTICS : : 500	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 77.5 : +- 1.5	
Check tolerance cm3/1000s.	: +- 3.5	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 79.0	
BREAKAWAY		
Rack travel in mm Rated speed rpm Tolerance 1/min	: 9.80 : 1200 : + 5	
STARTING FUEL DELIVERY		
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.		

vel. quantity		
cm3/1000 strokes	:	11.5
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	4.0
Spreed		
Tolerance		
cm3/1000 strokes	:	4.5
Check tolerance		
cm3/1000s.	:	7.0

End of test specification sheet

LOW IDLE

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 243

Injection pump

Pump designation : PES4A80D32ORS1282-1

EP type number : 9 400 083 097

Governor

Governer design. : RS350/1500A2C2073

: -2R

Governer no. : 9 420 083 269

Cust. part No. :

Customer—spec. information Customer : MWM Motor : D 229-4

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.70
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 4.50

### BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 9.25
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 58.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance cm3/1000s. : +- 2.0	control lever
Spreed	+ position degree : 117.0 + tolerance degree : +- 4.0
Tolerance cm3/1000 strokes : 2.5	RATED SPEED
Check tolerance cm3/1000s. : 4.0	rack travel mm : 8.20 Rated speed rpm : 1585 Tolerance 1/min : + 5
Del. quantity cm3/1000 strokes : 9.0	rack travel mm : 4.00
Tolerance cm3/1000 strokes : + 1.5	Rated speed rpm : 1640 Tolerance 1/min : + 15
Check tolerance cm3/1000s. : + 3.5	rack travel mm : 1.00
Spreed Tolerance	Tolerance mm : + 0.70 Rated speed rpm : 1800
cm3/1000 strokes : 4.0 Check tolerance	‡
cm3/1000s. : 6.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 60.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	Testing:
Rated speed rpm : 800	Rated speed rpm : 350
Rack travel in mm: 0.65 Tolerance mm: +- 0.35	rack travel mm : 6.10 Tolerance mm : +- 0.10
governor spring	rack travel mm : 4.00 Rated speed rpm : 460
pre-tension click setting $x$ : 5.50	Tolerance 1/min : + 30
FULL LOAD DELTUEDV AT FULL LOAD CTOD	Rated speed rpm : 250
FULL LOAD DELIVERY AT FULL LOAD STOP	+ CRT mm min. : > 6.80
Rated speed rpm : 1500 Aneroid pressure hPa : -	Rated speed rpm : 550  CRT mm max. : < 3.20
Del. quantity cm3/1000 strokes : 58.5	T CRI INHI HIGA. : S.EU
Tolerance : +- 0.5	TORQUE CONTROL
Check tolerance cm3/1000s. : +- 2.0	Rated speed rpm : 1500 + rack travel mm : 9.25
Spreed Tolerance	Tolerance mm : +- 0.05
cm3/1000 strokes : 2.5 Check tolerance	Rated speed rpm : 500 rack travel mm : 10.65
cm3/1000s. : 4.0	+ Tolerance mm : + 0.05
CONTROL LEVED	+ Rated speed rpm : 900 + rack travel mm : 10.30 + Tolerance mm : + 0.10
CONTROL LEVER	+ Tolerance mm : +- 0.10

Reted speed rpm : 1260 rack travel mm : 9.65 Tolerance mm : 4- 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 59.5

Tolerance

cm3/1000 strokes : +- 1.5

Check tolerance

cm3/1000s. :  $\leftarrow$  3.0

Aneroid pressure

hPa

Rated speed rpm : 900

Del. quantity

cm3/1000 strokes : 64.0

Tolerance

cm3/1000 strokes : +- 1.5

Check tolerance

cm3/1000s. : +- 3.0

BREAKAWAY

Rack travel in mm : 8.20 Rated speed rpm : 1585

Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00

Tolerance mm : + 1.00

LOW IDLE

Del. quantity

cm3/1000 strokes : 9.0

Tolerance

cm3/1000 strokes : +- 1.5

Check tolerance

cm3/1000s. : +- 3.5

Spreed

Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 6.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.09.95 Test oil : ISO 4113

Combination No. : 9 400 085 254

Injection pump

Pump designation : PES6A90D410RS2293 EP type number : 0 410 896 031

Governor

Governer design. : RSV500...900A0B2211

: -1L

Governer no. : 9 420 083 204

Cust. part No. :

Customer—spec. information Customer : MBB\_\_\_

Motor : OM 352 (A)

# TEST BENCH REQUIREMENTS

Inlet line : 2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.20
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

# BASIC SETTING

Rated speed rpm : 880

Rack travel in mm : 10.05 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 57.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed Tolerance

cm3/1000 strokes :

3.0

Check tolerance cm3/1000s. :

5.0

Del. quantity	
cm3/1000 strokes	: 12.0
Tolerance	
cm3/1000 strokes Check tolerance	: <b>←</b> 2.0
cm3/1000s.	: +- 4.0
Spreed	
Tolerance cm3/1000 strokes	: 2.5
Check tolerance	
cm3/1000s.	: 4.5
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP
GUIDE SLEEVE POSI	TION
Rated speed rpm	: 800
Rack travel in mm	: 0.65
Tolerance mm	: +- 0.35
governor spring	
pre-tension	
click setting x	: 4.00
FULL LOAD DELIVER	Y AT FULL LOAD STOP
	Y AT FULL LOAD STOP : 880
Rated speed rpm Aneroid pressure	: 880
Rated speed rpm Aneroid pressure hPa	
Rated speed rpm Aneroid pressure	: 880 : -
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: 880 : - : 57.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 880 : -
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 880 : - : 57.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 880 : - : 57.5 : +- 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 880 : - : 57.5 : +- 0.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 880 : - : 57.5 : + 0.5 : + 2.5 : 3.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 880 : - : 57.5 : + 0.5 : + 2.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 880 : - : 57.5 : + 0.5 : + 2.5 : 3.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 880 : - : 57.5 : + 0.5 : + 2.5 : 3.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 880 : - : 57.5 : + 0.5 : + 2.5 : 3.0 : 5.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 880 : - : 57.5 : + 0.5 : + 2.5 : 3.0 : 5.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 880 : - : 57.5 : + 0.5 : + 2.5 : 3.0 : 5.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 880 : - : 57.5 : + 0.5 : + 2.5 : 3.0 : 5.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. CONTROL LEVER control lever position degree tolerance degree	: 880 : - : 57.5 : + 0.5 : + 2.5 : 3.0 : 5.0

Tolerance 1/min	: +- 3
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 953 : + 3
rack travel mm Tolerance mm Rated speed rpm	: 1.00 : + 0.70 : 1100
LOW IDLE	
control lever position degree tolerance degree	: 75.0 : + 4.0
Setting point w/d	out bumper spring
Rated speed rpm rack travel mm	: 500 : 6.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 500 : 6.50 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 565 : + 30
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 880 : 10.05 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 10.10 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 400 : 11.50 : + 0.10
BREAKAWAY	

Rack travel in mm : 9.00
Rated speed rpm : 908
Tolerance 1/min : + 3

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 14.50 Tolerance mm : 10.30

# LOW IDLE

Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 4.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 08.04.96 Edition. : ISO 4113 Test oil

Combination No. : 9 400 085 255

Injection pump

Pump designation : PES5A80D410RS2526 EP type number : 9 400 093 007

Governor

Governer design. : RS325/1400A0C2212L

: 9 420 083 295 Governer no.

Cust. part No. :

Customer-spec. information

Customer : DEUTZ ARGENTINA

: F5L913 Motor

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar : +- 1.5 Tolerance bar

: 1 680 750 003 Test lines

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

1.95 Prestroke mm : +- 0.05 Tolerance mm Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-3-5-4-2 Firing order

: 0-72-144-216-288 Phasing

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm: 11.55 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 66.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

: +cm3/1000s. 2.0

Spreed Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. 4.0

Del. quantity

cm3/1000 strokes : 11.0

Tolerance cm3/1000 strokes : +- 1.5 Check tolerance	+ Rated speed rpm : 1515 Tolerance 1/min : +- 15
cm3/1000s. : +- 3.5 Spreed	rack travel mm : 1.00 Tolerance mm : + 0.70
Tolerance cm3/1000 strokes : 4.0 Check tolerance	Rated speed rpm : 1650
cm3/1000s. : 6.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 70.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	Testing:
Rated speed rpm : 800  Rack travel in mm : 0.65	Rated speed rpm : 325 rack travel mm : 8.50 Tolerance mm : +- 0.10
Tolerance mm : + 0.35 governor spring	rack travel mm : 6.00 Rated speed rpm : 420
pre-tension click setting x : 4.00	Tolerance 1/min : +- 30 Rated speed rpm : 280
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. :> 8.80
Rated speed rpm : 1400 - Aneroid pressure	Rated speed rpm : 550
hPa :	CRT mm max. : < 4.40
cm3/1000 strokes : 66.0 - Tolerance -	TORQUE CONTROL
cm3/1000 strokes : +- 0.5 Check tolerance cm3/1000s. : +- 2.0	Rated speed rpm : 1400 rack travel mm : 11.55
Spreed - Tolerance - cm3/1000 strokes : 2.5 -	Tolerance mm : + 0.05 Rated speed rpm : 500
Check tolerance cm3/1000s. : 4.0	rack travel mm : 12.25 Tolerance mm : +- 0.05
-	Rated speed rpm : 1100 rack travel mm : 11.95
CONTROL LEVER	rack travel mm : 11.95 Tolerance mm : + 0.15
control lever position degree : 113.0 tolerance degree : + 4.0	
RATED SPEED -	FUEL DELIVERY CHARACTERISTICS
rack travel mm : 10.50 Rated speed rpm : 1445 Tolerance 1/min : + 5	Aneroid pressure hPa : - Rated speed rpm : 500
rack travel mm : 4.00	- Del. quantity - cm3/1000 strokes : 56.5

Tolerance cm3/1000 strokes : +- 1.5Check tolerance cm3/1000s. 3.0 Aneroid pressure Rated speed rpm 1100 Del. quantity cm3/1000 strokes : 63.0 Tolerance cm3/1000 strokes : +-1.5 Check tolerance cm3/1000s. 3.0 **BREAKAWAY** 10.50 Rack travel in mm : Rated speed rpm : Tolerance 1/min : +-STARTING FUEL DELIVERY 100 Rated speed rpm rack travel mm 20.00 : + 1.00 Tolerance mm LOW IDLE Del. quantity cm3/1000 strokes : 11.0 Tolerance cm3/1000 strokes : +-1.5 Check tolerance cm3/1000s. 3.5 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 6.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W480/...

Edition Test oil

: 09.04.96 : ISO 4113

Combination No. : 9 400 085 301

Injection pump

Pump designation : PES6A85D410RS2415 EP type number : 0 410 886 907

Governor

Governer design. : RQV350...1325AB1234

: -1L

Governer no.

: 9 420 080 259

Cust. part No. :

Customer-spec. information

Customer : DEUTZ-ARGENTINA

Motor

: BF 6L 913

Power KW

: 116.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : + 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar

Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 32.0 Tolerance bar : +- 1.0

Prestroke mm 1.95 Tolerance mm : + 0.05Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

### BASIC SETTING

Rated speed rpm : 1325

Rack travel in mm: 11.15

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 77.5

Tolerance cm3/1000 strokes : + 0.5

Check tolerance cm3/1000s. : +- 2.5

Spreed

Tolerance cm3/1000 strokes : 3.0

Check tolerance cm3/1000s. : 7.0

1	1 Dal mandida
Dal manhahi	Del. quantity
Del. quantity	cm3/1000 strokes : 77.5
cm3/1000 strokes : 16.0	Tolerance
Tolerance	cm3/1000 strokes : +- 0.5
cm3/1000 strokes : $+$ 2.0	Check tolerance
Check tolerance	cm3/1000s. : +- 2.5
cm3/1000s. : +- 4.0	- Spreed
Spreed -	- Tolerance
Tolerance	- cm3/1000 strokes : 3.0
cm3/1000 strokes : 4.5	Check tolerance
Check tolerance	- cm3/1000s. : 7.0
cm3/1000s. : 7.0	1
(B) SETTING OF INJECTION PUMP	CONTROL LEVER
	F CONTROL LEVER
WITH GOVERNOR	
1	- control lever
	- position degree : 61.0
GUIDE SLEEVE TRAVEL	tolerance degree : +- 4.0
-	
Rated speed rpm : 1400	- control lever
guide sleeve	- position degree : 116.0
travel mm : 8.90	- tolerance degree : +- 4.0
Tolerance mm : +- 0.10	•
	RATED SPEED
Rated speed rpm : 900	THE OF CED
guide sleeve	rack travel mm : 10.10
travel mm : 4.95	- Rated speed rpm : 1370
Tolerance mm : +- 0.25	Tolerance 1/min : +- 5
700	
Rated speed rpm : 300	rack travel mm : 4.00
guide sleeve	- Rated speed rpm : 1470
travel mm : 0.75	- Tolerance 1/min : + 15
Tolerance mm : $+$ 0.25	_
4	- rack travel mm : 0.50
Rated speed rpm : 600	- Tolerance mm : + 0.50
guide sleeve	- Rated speed rpm : 1600
travel mm : 2.85	- 1000 opcour pm + 1000
Tolerance mm : + 0.25	_
Total de limit	
Rated speed rpm : 1200	LOW TOLE
	- LOW IDLE
guide sleeve	-
travel mm : 6.95	-
Tolerance mm : + 0.25 +	- control lever
<del>†</del>	- position degree : 70.0
	- tolerance degree : +- 4.0
GUIDE SLEEVE POSITION +	•
<del>-  </del> -	- control lever
Rated speed rpm : 1350	- position degree : 15.0
· · · · · ·	- tolerance degree : +- 4.0
Rack travel in mm: 16.50	•
Tolerance mm : + 1.30	- Testing:
10001 00 100	
	Rated speed rpm : 350
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 8.00
FULL FOAD DELIVERS AT FULL FOAD STOP	Tolerance mm : +- 0.10
9-4-4 472F	· roterance mm : To U. IU
Rated speed rpm : 1325	. Detail and all many ADD
Aneroid pressure	Rated speed rpm : 100
hPa : - +	,
+	CRT mm min. :> 9.00

Rated speed rpm TORQUE CONTROL	: 450	Del. quantity cm3/1000 strokes : 77.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 3.5
Rated speed rpm rack travel mm Tolerance mm	: 1325 : 11.15 : +- 0.05	BREAKAWAY
Rated speed rpm rack travel mm Tolerance mm	: 12.35 : + 0.05	Rack travel in mm: 10.10 Rated speed rpm: 1370 Tolerance 1/min: +- 5
Rated speed rpm rack travel mm Tolerance mm	: 12.25	<u> </u>
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 11.60 : + 0.10	+ STARTING FUEL DELIVERY  + Rated speed rpm : 100  - rack travel mm : 20.00  - Tolerance mm : + 1.00
START CUT-OUT		<del></del>
Rated speed rpm Rated speed rpm		LOW IDLE
Check speed 1/min Check speed 1/min		Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0
FUEL DELIVERY CHA	ARACTERISTICS	+ Spreed + Tolerance + cm3/1000 strokes : 4.5
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance		Check tolerance cm3/1000s. : 7.0
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.5 : +- 3.5	End of test specification sheet
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 800 : 79.0 : + 1.5 : + 3.5	† † † † † †
hPa Rated speed rpm	1100	Ţ

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 302

Injection pump

Pump designation : PES6A90D320RS2767 EP type number : 9 400 084 017

Governor

Governer design. : RSV300...1400A0C2207

: -2R

Governer no. : 9 420 083 299

Cust. part No. : 905200569079

Customer-spec. information

Customer : MWM

Motor : TBD 229-6 EC

Power KW : 185.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

G03

x inside diameter: 2.0 x length mm : 600

# **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.55
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

### BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 14.35 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 120.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

	1
Spreed Tolerance cm3/1000 strokes : 3.0	control lever position degree : 116.0 tolerance degree : + 4.0
CIIDA 1000 SCPORES : 5.0	T soterance degree : +- 4.0
Check tolerance cm3/1000s. : 7.0	RATED SPEED  rack travel mm : 13.30
Del. quantity cm3/1000 strokes : 15.0 Tolerance	Rated speed rpm : 1445 Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance cm3/1000s. : +- 4.0 Spreed	+ Rated speed rpm : 1555 + Tolerance 1/min : +- 15
Tolerance cm3/1000 strokes : 4.5 Check tolerance	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1700
cm3/1000s. : 7.0	Rated speed rpm : 1700
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
	+ control lever
GUIDE SLEEVE POSITION	position degree : 80.0 tolerance degree : + 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm : 0.65 Tolerance mm : +- 0.35	Rated speed rpm : 300 rack travel mm : 7.50
governor spring pre-tension	Testing:
click setting x : 4.25	Rated speed rpm : 300 rack travel mm : 8.00
FULL LOAD DELIVERY AT FULL LOAD STOP	† Tolerance mm : + 0.10
FOLL LOAD DELIVERY AT FOLL LOAD STOP	Track travel mm : 2.00
Rated speed rpm : 1400	+ Rated speed rpm : 485
Aneroid pressure	+ Tolerance 1/min : + 30
hPa : -	+ Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 120.5	Rated speed rpm : 100
Tolerance	CRT mm min. : > 19.00
cm3/1000 strokes : + 0.5	+
Check tolerance	+
cm3/1000s. : + 2.5 Spreed	TORQUE CONTROL
Tolerance cm3/1000 strokes : 3.0	+ Rated speed rpm : 1400 + rack travel mm : 14.35
Check tolerance	Tolerance mm : + 0.05
cm3/1000s. : 7.0	† Batadanada 500
	+ Rated speed rpm : 500 + rack travel mm : 14.40
	+ rack travel mm : 14.40 + Tolerance mm : + 0.10
CONTROL LEVER	Total direction . 1 = 0.10
CONTINUE EEVEN	Rated speed rpm : 350 rack travel mm : 15.80

Tolerance mm :  $\leftarrow$  0.30 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 500 Rated speed rpm Del. quantity cm3/1000 strokes : 109.0 Tolerance cm3/1000 strokes : +- 1.5 Check tolerance cm3/1000s. 3.5 BREAKAWAY 13.30 Rack travel in mm: Rated speed rpm : 1445 Tolerance 1/min : + STARTING FUEL DELIVERY Rated speed rpm 100 rack travel mm : 20.00 : + 1.00 Tolerance mm LOW IDLE Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance 4.5 cm3/1000 strokes : Check tolerance cm3/1000s. 7.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 09.04.96 : ISO 4113

Combination No. : 9 400 085 306

Injection pump

Pump designation : PES6A90D410RS2596

EP type number : 0 410 896 073

Governor

Governer design. : RQV300...1400AB1066

: -7L

Governer no.

: 9 420 080 267

Cust. part No. : 0180742402

Customer-spec. information

Customer Motor

: MBB : 0M352A

Power KW

: 121.4

### TEST BENCH REQUIREMENTS

Inlet line

: 3.2

Test oil inlet

temp. °C : +- 2.0 Tolerance \*C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 : +- 1.5 Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm :

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: Tolerance bar : +-

Prestroke mm 2.05 : + 0.05Tolerance mm

Check

: + 0.10tolerance mm

Rack travel in mm: 10.50 : +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

### BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm: 12.45 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 78.0

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance

cm3/1000s. 2.5

Spreed

Tolerance

cm3/1000 strokes :

3.0

Check tolerance

cm3/1000s.

: 7.0

ı	_
Dal minutable	Spreed
Del. quantity	Tolerance
cm3/1000 strokes : 12.0	cm3/1000 strokes : 3.0
Tolerance + 2.0 +	Check tolerance cm3/1000s. : 7.0
Check tolerance	cm3/1000s. : 7.0
check toterance : +- 4.0 +	
Spreed +.0	
Tolerance	CONTROL LEVER
cm3/1000 strokes : 4.5	CONTROL LEVER
Check tolerance	control lever
cm3/1000s. : 7.0	position degree : 64.0
	tolerance degree : + 4.0
1	50 tot alloc dog. 55 1
(B) SETTING OF INJECTION PUMP	control lever
WITH GOVERNOR	position degree : 114.0
<u>}</u>	tolerance degree : + 4.0
	-
GUIDE SLEEVE TRAVEL	RATED SPEED
+	
Rated speed rpm : 300 +	rack travel mm : 11.50
guide sleeve	Rated speed rpm : 1445 _
travel mm : 1.05	Tolerance 1/min : +- 5
Tolerance mm : + 0.25	
4500	rack travel mm : 4.00
Rated speed rpm : 1500 +	Rated speed rpm : 1590
guide steeve +	Tolerance 1/min : +- 20
travel mm : 8.55	need days - 0.50
Tolerance mm : +- 0.05	rack travel mm : 0.50
Dated around man . 500	Tolerance mm : + 0.50 Rated speed rpm : 1750
Rated speed rpm : 500	Rated speed rpm : 1750
guide steeve + travel mm : 2.55 +	
Tolerance mm : +- 0.25	
Total differential . 1 C.25	LOW IDLE
Rated speed rpm : 750	COM TOCK
guide sleeve	
travel mm : 4.20	control lever
Tolerance mm : + 0.10	position degree : 71.0
+	tolerance degree : +- 4.0
GUIDE SLEEVE POSITION +	control lever
+	position degree : 21.0
Rated speed rpm : 1500 +	tolerance degree : +- 4.0
†	•
Rack travel in mm: 16.50	Testing:
Tolerance mm : + 1.30 +	Data-dama-dama- 200
†	Rated speed rpm : 300
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 9.00 Tolerance mm : +- 0.10
FULL LUMD DELIVERY AT FULL LUMD STOP	Toterance min : +- 0.10
Rated speed rpm : 1400	Rated speed rpm : 100
Rated speed rpm : 1400 + Aneroid pressure +	nated speed (pill . 100
hPa : 700	CRT mm min. : > 10.30
Del. quantity	Constitution of two
cm3/1000 strokes : 78.0	Rated speed rpm : 620
Tolerance	
cm3/1000 strokes : + 0.5 +	
Check tolerance +	TORQUE CONTROL
cm3/1000s. : + 2.5 +	
·	

Rated speed rpm rack travel mm Tolerance mm	: 1400 : 12.45 : +- 0.05	Tolerance cm3/1000 strokes : +- 1.5 Check tolerance
Rated speed rpm	: 500	+ cm3/1000s. : + 3.5
rack travel mm Tolerance mm		+ Aneroid pressure + hPa : 700 + Rated speed rpm : 1000
Rated speed rpm rack travel mm		Del. quantity  + cm3/1000 strokes : 76.5
Tolerance mm	: +- 0.10	Tolerance cm3/1000 strokes : +- 1.5
ANEROID/ALTITUDE COMPENSATOR TEST		
CONTRACTOR TEST		Aneroid pressure hPa : -
SETTING		Rated speed rpm : 500 Del. quantity
Rated speed rpm Pressure hPa	: 700	cm3/1000 strokes : 57.5 Tolerance
rack travel mm Tolerance mm	: 13.25 : + 0.05	+ cm3/1000 strokes : + 0.5 + Check tolerance + cm3/1000s. : + 2.5
MEASUREMENT		
Pressure hPa Rated speed rpm rack travel mm	: 12.35	BREAKAWAY
Tolerance mm	: + 0.05	Rack travel in mm : 11.50 Rated speed rpm : 1445
Rated speed rpm		+ Tolerance 1/min : +- 5
Pressure hPa rack travel mm Tolerance mm	: 12.60	STARTING FUEL DELIVERY
Pressure hPa rack travel mm Tolerance mm		Rated speed rpm : 100 rack travel mm : 16.00 Tolerance mm : + 0.20
	. +- 0.03	Del. quantity
START CUT-OUT		Tolerance - cm3/1000 strokes : +- 7.5
Rated speed rpm Rated speed rpm	: > 100 : < 220	+ Check tolerance + cm3/1000s. : +- 10.0
Check speed 1/min	: > 80	+
Check speed 1/min	: < 240	LOW IDEE
FUEL DELIVERY CHA	ARACTERISTICS	Del. quantity cm3/1000 strokes : 12.0 Tolerance
Aneroid pressure hPa	: 700	cm3/1000 strokes : +- 2.0 Check tolerance
Rated speed rpm Del. quantity	: 500	cm3/1000s. : + 4.0 + Spreed
cm3/1000 strokes	: 66.5	+

G08

Tolerance : 4.5 Check tolerance cm3/1000s. : 7.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 09.04.96 Edition Test oil : ISO 4113

Combination No. : 9 400 085 307

Injection pump

Pump designation : PES4A95D410RS2774 EP type number : 9 400 084 019

Governor

: RQV300...1300AB1228 Governer design.

: -1L

: 9 420 080 268 Governer no.

Cust. part No.

Customer-spec. information Customer : MBB : OM 364 A Motor Power KW 85.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar 1.5 Tolerance bar

Test lines : 1 680 750 015

Outside diameter : 6.0

G10

x inside diameter: 3.0 x length mm : ሪበበ

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +-1.0

3.25 Prestroke mm : +- 0.05 Tolerance mm

Check

: + 0.10tolerance mm

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

: 1-3-4-2 Firing order

: 0-90-180-270 Phasing

BASIC SETTING

Rated speed rpm 1300

Rack travel in mm: 10.65

: +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 91.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +--3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s.

8.0

Del. quantity	+ Tolerance
cm3/1000 strokes : 10.0	+ cm3/1000 strokes : 3.5
Tolerance	+ Check tolerance
cm3/1000 strokes : +- 2.0	+ cm3/1000s. : 8.0
Check tolerance cm3/1000s. : +- 4.5	İ
Spreed	
Tolerance	+ CONTROL LEVER
cm3/1000 strokes : 5.5	+
Check tolerance cm3/1000s. : 9.0	control lever
cm3/1000s. : 9.0	<pre>position degree : 59.0 tolerance degree : + 4.0</pre>
	+
(B) SETTING OF INJECTION PUMP	the control lever
WITH GOVERNOR	<pre>position degree : 108.0 tolerance degree : +- 4.0</pre>
	T total dive degree . 4.0
GUIDE SLEEVE TRAVEL	RATED SPEED
Rated speed rpm : 300	rack travel mm : 9.60
guide sleeve	Rated speed rpm : 1365
travel mm : 1.05	Tolerance 1/min : + 5
Tolerance mm : + 0.25	rack travel mm : 4.00
Rated speed rpm : 1500	Rated speed rpm : 1490
guide sleeve	+ Tolerance 1/min : + 15
travel mm : 8.55	†
Tolerance mm : + 0.05	+ rack travel mm : 0.50 + Tolerance mm : + 0.50
Rated speed rpm : 500	+ Tolerance mm : +- 0.50 + Rated speed rpm : 1640
guide sleeve	- Nacea opeca i piii . 1040
travel mm : 2.55	+
Tolerance mm : + 0.25	1011 701 7
Rated speed rpm : 750	+ LOW IDLE
guide sleeve	$\perp$
travel mm : 4.20	control lever
Tolerance mm : +- 0.10	+ position degree : 68.0
	tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	T control lever
	position degree : 19.0
Rated speed rpm : 1500	tolerance degree : + 4.0
Rack travel in mm : 16.50	† Testing:
Tolerance mm : + 1.30	- resering.
· · · · · · · · · · · · · · · · · · ·	Rated speed rpm : 300
	rack travel mm : 7.00 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	+ loterance mm : + 0.10
Rated speed rpm : 1300	Rated speed rpm : 100
Aneroid pressure hPa : 700	+ CRT mm min. :> 8.00
hPa : /0U Del. quantity	+
cm3/1000 strokes : 91.0	Rated speed rpm : 485
Tolerance	+
cm3/1000 strokes : +- 1.0 Check tolerance	TORQUE CONTROL
cm3/1000s. : +- 3.0	TOURSE CONTINUE
Spreed	+ Rated speed rpm : 1300

rack travel mm Tolerance mm	: 10.65 : + 0.05	+ Check tolerance - cm3/1000s. : +- 4.0
Rated speed rpm rack travel mm Tolerance mm	: 800 : 11.05 : ← 0.05	Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity
Rated speed rpm rack travel mm Tolerance mm		cm3/1000 strokes : 53.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0
ANEROID/ALTITUDE COMPENSATOR TEST		BREAKAWAY
SETTING		†
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 700 : 11.05 : + 0.05	Rack travel in mm: 9.60 Rated speed rpm: 1365 Tolerance 1/min: + 5
MEASUREMENT		STARTING FUEL DELIVERY
Pressure hPa Rated speed rpm	: - : 500	Rated speed rpm : 100 rack travel mm : 13.00 Tolerance mm : + 0.10
Rated speed rpm	: 500	Del. quantity cm3/1000 strokes : 84.0
Pressure hPa rack travel mm Tolerance mm	: 280 : 0.45 : + 0.05	Tolerance cm3/1000 strokes : +- 6.0
Pressure hPa rack travel mm Tolerance mm	: 410 : 1.40 : + 0.10	LOW IDLE
START CUT-OUT		Del. quantity cm3/1000 strokes : 10.0 Tolerance
Rated speed rpm	: > 100	+ cm3/1000 strokes : +- 2.0
Rated speed rpm	: < 220	+ Check tolerance - cm3/1000s. : +- 4.5
	: > 80	+ Spreed + Tolerance
Check speed 1/min	: < 240	cm3/1000 strokes : 5.5 Check tolerance
FUEL DELIVERY CHA	RACTERISTICS	‡
Aneroid pressure hPa	: 700	
Rated speed rpm Del. quantity cm3/1000 strokes		End of test specification shee
Tolerance cm3/1000 strokes		<del> </del>

ication sheet

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 09,04,96 : ISO 4113

Combination No.

: 9 400 085 311

Injection pump

Pump designation : PES6A90D320RS2718

EP type number

: 9 400 084 003

Governor

Governer design.

: RSV350...1250A0c1108

: -2R

Governer no.

: 9 420 083 272

Cust. part No. :

Customer-spec. information

Customer

: MWM

Motor

: TD 229 EC-06

Power KW : 121.5

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

173.5

Tolerance bar

: + 1.5

Test Lines

: 1 680 750 014

Outside diameter : 6.0

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

2.0

600

Set equal delivery quant.

x inside diameter:

x length mm :

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0

Tolerance bar : + 1.0

Prestroke mm 2.75 : +- 0.05 Tolerance mm

Check

tolerance mm : + - 0.10

Rack travel in mm : 10.50

Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

travel

10.50 : +- 1.50

Tolerance mm

Difference \* CS : 3.50

BASIC SETTING

Rated speed rpm

1200

Rack travel in mm: 10.85 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes :

89.0

Tolerance

cm3/1000 strokes : +-

0.5

Check tolerance

cm3/1000s.

: +--2.5

G13

4	_
Spreed	- control lever
Tolerance	- position degree : 109.0
cm3/1000 strokes : 3.0	tolerance degree : + 4.0
	•
Check tolerance	- RATED SPEED
cm3/1000s. : 7.0	•
1	rack travel mm : 9.80
Del. quantity	- Rated speed rpm : 1295
cm3/1000 strokes : 11.0	- Tolerance 1/min : +- 5
Tolerance	•
cm3/1000  strokes : + 2.0	rack travel mm : 4.00
Check tolerance	- Rated speed rpm : 1375
cm3/1000s. : + 4.0	- Tolerance 1/min : +- 15
Spreed	•
Tolerance	- rack travel mm : 0.85
cm3/1000 strokes : 4.5	Tolerance mm : +- 0.55
Check tolerance	- Rated speed rpm : 1450
cm3/1000s. : 7.0	•
<b>+</b>	
1	
(B) SETTING OF INJECTION PUMP	· LOW IDLE
WITH GOVERNOR +	•
+	•
<del>†</del>	control lever
	position degree : 79.0
GUIDE SLEEVE POSITION +	tolerance degree : +- 4.0
Batad aread area a 200	
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.65	Rated speed rpm : 350
Tolerance mm : + 0.35	rack travel mm : 4.70
Total alice data . , 0.55	. I GUN LI GYEL IMBI . 4.70
governor spring	Testing:
pre-tension +	
click setting x : 4.50	Rated speed rpm : 350
octor sociality in the second	rack travel mm : 5.20
	Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	
4	rack travel mm : 2.00
Rated speed rpm : 1200	Rated speed rpm : 425
Aneroid pressure +	Tolerance 1/min : + 30
hPa : -	
Del. quantity	Rated speed rpm : 100
cm3/1000 strokes : 89.0 +	
Tolerance +	CRT mm min. : > 19.00
cm3/1000 strokes : + 0.5	
Check tolerance	
cm3/1000s. : +- 2.5	TORQUE CONTROL
Spreed	Debed and during 4000
Tolerance + 3.0	Rated speed rpm : 1200
cm3/1000 strokes : 3.0	rack travel mm : 10.85
Check tolerance + cm3/1000s. : 7.0 +	Tolerance mm : + 0.05
cm3/1000s. : 7.0	Rated speed rpm : 500
7	Rated speed rpm : 500 rack travel mm : 10.90
<u> </u>	Tolerance mm : + 0.10
CONTROL LEVER	15 COT GLICO THIN U. IU
Totalion pract	Rated speed rpm : 400
I	rack travel mm : 12.30

Tolerance mm : +- 0.30

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 80.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

### BREAKAWAY

Rack travel in mm : 9.80 Rated speed rpm : 1295 Tolerance 1/min : + 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00

## LOW IDLE

Del. quantity

cm3/1000 strokes : 11.0

Tolerance -

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 4.5

Check tolerance cm3/1000s.

: 7.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 09.04.96 Edition Test oil : ISO 4113

Combination No. : 9 400 085 327

Injection pump

Pump designation : PES6A95D410RS2772 EP type number : 9 400 084 018

Governor

Governer design. : RSV350...1250A0C1150

: -4L

: 9 420 083 256 Governer no.

Cust. part No. :

Customer-spec. information Customer : MBB

Motor : OM 366 A Power KW : 121.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 : +- 1.5 Tolerance bar

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

: 3.25 Prestroke mm : +- 0.05 Tolerance mm Check : + - 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

# BASIC SETTING

tolerance mm

Rated speed rpm : 1250

Rack travel in mm: 9.65 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 82.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s.

: +--3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. 8.0

G16

Del. quantity cm3/1000 strokes	: 15.0
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000S. Spreed	: <b>←</b> 5.0
Tolerance cm3/1000 strokes	<b>:</b> 5.5
Check tolerance cm3/1000s.	: 9.0
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP
GUIDE SLEEVE POSIT	ION
Rated speed rpm	: 800
Rack travel in mm Tolerance mm	: 0.65 : +- 0.35
governor spring pre-tension click setting x	: 3.25
EUR LOAD DELTUEDY	
FULL LOAD DELIVERY	AT FULL LOAD STOP
Rated speed rpm	AT FULL LOAD STOP : 1250
Rated speed rpm Aneroid pressure hPa Del. quantity	: 1250 : -
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: 1250 : – : 82.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1250 : - : 82.0 : +- 1.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1250 : – : 82.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1250 : - : 82.0 : +- 1.0 : +- 3.0 : 3.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 1250 : - : 82.0 : +- 1.0 : +- 3.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1250 : - : 82.0 : +- 1.0 : +- 3.0 : 3.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1250 : - : 82.0 : +- 1.0 : +- 3.0 : 3.5 : 8.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  CONTROL LEVER control lever position degree	: 1250 : - : 82.0 : +- 1.0 : +- 3.0 : 3.5 : 8.0

Tolerance 1/min	: +- 5
rack travel mm	: 4.00
Rated speed rpm	: 1340
Tolerance 1/min	: +- 15
rack travel mm	: 1.00
Tolerance mm	: +- 0.70
Rated speed rpm	: 1500
LOW IDLE	et Piloning i Marina and marina i Marina and marina and marina and marina and marina and marina and marina and
control lever position degree tolerance degree	: 75.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 350
rack travel mm	: 6.30
Testing:	
Rated speed rpm	: 350
rack travel mm	: 6.80
Tolerance mm	: ← 0.10
rack travel mm	: 2.00
Rated speed rpm	: 450
Tolerance 1/min	: + 30
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm	: 1250
rack travel mm	: 9.65
Tolerance mm	: +- 0.05
Rated speed rpm	: 800
rack travel mm	: 9.65
Tolerance mm	: + 0.05
Rated speed rpm	: 500
rack travel mm	: 9.70
Tolerance mm	: ← 0.10
Rated speed rpm	: 400
rack travel mm	: 11.10
Tolerance mm	: + 0.30

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 800 Del. quantity

cm3/1000 strokes : 74.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

## **BREAKAWAY**

Rack travel in mm : 8.60
Rated speed rpm : 1295
Tolerance 1/min : +- 5

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 14.00 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 strokes : + 10.9

Check tolerance

cm3/1000s. : +- 13.0

# LOW IDLE

Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : + 5.0

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 09.04.96 : ISO 4113

Combination No. : 9 400 085 329

Injection pump

Pump designation : PES6A95D410RS2772 EP type number : 9 400 084 018

Governor

Governer design. : RQV300...1300AB1256L

Governer no. : 9 420 080 297

Cust. part No. :

Customer-spec. information

Customer : MBB : OM 366 LA Motor

Power KW

: 150.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C : +- 2.0

Overflow valve : 1 417 413 006

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 : + 1.5 Tolerance bar

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x Length mm : 600

## **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 11.15 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 99.0

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance

3.0 cm3/1000s.

Spreed Tolerance

cm3/1000 strokes :

3.5

Check tolerance cm3/1000s.

6.0

•	
No.1 minutes.	Spreed
Del. quantity + cm3/1000 strokes : 11.0 +	Tolerance
Tolerance	cm3/1000 strokes : 3.5
cm3/1000 strokes : +- 3.0	Check tolerance cm3/1000s. : 6.0
	CM5/10005. : 0.0
Check tolerance	
cm3/1000s. : + 5.0 +	
Spreed	AANST ALL AND THE STATE OF THE
Tolerance	CONTROL LEVER
cm3/1000 strokes : 3.5	
Check tolerance +	control lever
cm3/1000s. : 5.5	position degree : 60.0
+	tolerance degree : +- 4.0
†	
(B) SETTING OF INJECTION PUMP +	control lever
WITH GOVERNOR +	position degree : 118.0
+	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL +	RATED SPEED
+	
Rated speed rpm : 300 +	rack travel mm : 10.10
guide sleeve +	Rated speed rpm : 1365
travel mm : 1.05	Tolerance 1/min : + 5
Tolerance mm : $+$ 0.25	
1	rack travel mm : 4.00
Rated speed rpm : 1500	Rated speed rpm : 1505
guide sleeve +	Tolerance 1/min : +- 15
travel mm : 8.55	
Tolerance mm : + 0.05	rack travel mm : 0.50
TOTAL MAIN	Tolerance mm : + 0.50
Rated speed rpm : 500	Rated speed rpm : 1650
guide sleeve	nacea speca i pin : 1050
travel mm : 2.55	
Tolerance mm : + 0.25	
10 Cer di ice min	LOW IDLE
Rated speed rpm : 750	LOW IDEL
guide sleeve	
travel mm : 4.20	control lever
Tolerance mm : + 0.10	position degree : 74.0
Toterance in . +- 0.10	tolerance degree : +- 4.0
T	coterance degree : + 4.0
CLITAE CLEENE POSTITON	control lever
GUIDE SLEEVE POSITION	
Botod enough inm . 1500	position degree : 16.0
Rated speed rpm : 1500 +	tolerance degree : +- 4.0
01	Tankina
Rack travel in mm: 16.50 +	Testing:
<b>*</b> -1	
Tolerance mm : +- 1.30 +	Data di anno di mana 200
Tolerance mm : +- 1.30	Rated speed rpm : 300
+	rack travel mm : 7.00
FULL LOAD DELIVERY AT FULL LOAD STOP	The state of the s
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 7.00 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300	rack travel mm : 7.00
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure	rack travel mm : 7.00 Tolerance mm : + 0.10 Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 700	rack travel mm : 7.00 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 700 Del. quantity	rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 8.00
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 99.0	rack travel mm : 7.00 Tolerance mm : + 0.10 Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 99.0 Tolerance	rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 8.00
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 99.0	rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 8.00  Rated speed rpm : 485
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 99.0 Tolerance	rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 8.00
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 99.0 Tolerance cm3/1000 strokes : +- 1.0	rack travel mm : 7.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. :> 8.00  Rated speed rpm : 485

Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm  ANEROID/ALTITUDE COMPENSATOR TEST	: 11.15 : ← 0.05 : 700 : 11.15 : ← 0.05	Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 60.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0
SETTING		BREAKAWAY
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 700 : 11.15	Rack travel in mm: 10.10 Rated speed rpm: 1365 Tolerance 1/min: +- 5
MEASUREMENT		STARTING FUEL DELIVERY
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 9.55	Rated speed rpm : 100 rack travel mm : 13.70 Tolerance mm : + 0.10 Del. quantity
Rated speed rpm	: 500	cm3/1000 strokes : 84.0 Tolerance
Pressure hPa rack travel mm Tolerance mm		cm3/1000 strokes : +- 6.0
Pressure hPa rack travel mm Tolerance mm	: 450 : 10.65 : +- 0.05	LOW IDLE  Del. quantity
START CUT-OUT		cm3/1000 strokes : 11.0 Tolerance
Rated speed rpm Rated speed rpm		- cm3/1000 strokes : + 3.0 - Check tolerance - cm3/1000s. : +- 5.0 - Spreed
Check speed 1/min Check	: > 80	Tolerance cm3/1000 strokes : 3.5 Check tolerance
speed 1/min	: < 240	+ cm3/1000s. : 5.5
FUEL DELIVERY CHA	ARACTERISTICS	† + +
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 87.5 : +- 1.5	End of test specification sheet
cm3/1000s.	: +- 4.0	Τ

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 334

Injection pump

Pump designation : PES6A100D320/3RS2691

: -2

EP type number : 9 410 230 028

Governor

Governer design. : RQV350...1100AB1218

: -2R

Governer no. : 9 420 080 304

Cust. part No. : 3352552

Customer-spec. information Customer : CUMMINS

Motor : 6 CTA - 8.3 L

Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm: + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.65
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 128.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0	+ Check tolerance + cm3/1000s. : + 3.0 + Spreed
Spreed Tolerance cm3/1000 strokés : 3.5	Tolerance cm3/1000 strokes: 3.5 Check tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	
Del. quantity cm3/1000 strokes : 15.0 Tolerance	CONTROL LEVER
cm3/1000 strokes : +- 2.0 Check tolerance	position degree : 63.0 tolerance degree : + 4.0
cm3/1000s. : +- 4.5 Spreed Tolerance	control lever position degree : 118.0
cm3/1000 strokes : 5.5 Check tolerance	tolerance degree : +- 4.0
cm3/1000s. : 9.0	RATED SPEED
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 12.60 Rated speed rpm : 1145 Tolerance 1/min : +- 5
GUIDE SLEEVE TRAVEL	rack travel mm : 4.00 Rated speed rpm : 1260 Tolerance 1/min : + 15
Rated speed rpm : 1100 guide sleeve travel mm : 8.45	rack travel mm : 0.50 Tolerance mm : + 0.50
Tolerance mm : + 0.05  Rated speed rpm : 800	Rated speed rpm : 1400
guide sleeve travel mm : 5.75 Tolerance mm : + 0.15	LOW IDLE
Rated speed rpm : 350 guide sleeve travel mm : 2.40	control lever position degree : 72.0 tolerance degree : + 4.0
Tolerance mm : + 0.20	+ control lever
Rated speed rpm : 500 guide sleeve travel mm : 4.05	+ position degree : 17.0 + tolerance degree : + 4.0
Tolerance mm : + 0.15	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : + 0.10
Rated speed rpm : 1100 Aneroid pressure hPa : 900	Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 128.5	CRT mm min. :> 9.00
Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 425

TORQUE CONTROL		FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 1100	Aneroid pressure
rack travel mm	13.65	+ hPa : 900
Tolerance mm		+ Rated speed rpm : 800
Dadad based sam	. 900	+ Del. quantity + cm3/1000 strokes : 141.0
Rated speed rpm rack travel mm		+ Tolerance
Tolerance mm	: +- 0.05	- cm3/1000 strokes : +- 2.0
TOCCI GITEC MIN		+ Check tolerance
Rated speed rpm	: 900	+ cm3/1000s. : +- 4.0
rack travel mm		-
Tolerance mm		Aneroid pressure
		+ hPa : 900
Rated speed rpm	: 1000	+ Rated speed rpm : 900
rack travel mm	: 13.90	+ Del. quantity
Tolerance mm	: + 0.10	+ cm3/1000 strokes : 137.5
		† Tolerance
ANCRATA (AL TITURE		— + cm3/1000 strokes : + 2.0
ANEROID/ALTITUDE		+ Check tolerance + cm3/1000s. : + 4.0
COMPENSATOR TEST		T (m5/1000s. : T- 4.0
		T Aneroid pressure
SETTING		hPa : -
04112110		Rated speed rpm : 500
Rated speed rpm	: 500	Del. quantity
Pressure hPa	: 900	+ cm3/1000 strokes : 82.0
rack travel mm	: 14.45	+ Tolerance
Tolerance mm	: <del>+-</del> 0.05	+ cm3/1000 strokes : + 1.0
		+ Check tolerance
MEASUREMENT		+ cm3/1000s. : + 3.0
Pressure hPa	•	
Rated speed rpm	500	BREAKAWAY
rack travel mm		+
Tolerance mm	: <b></b> 0.10	+
		+ Rack travel in mm : 12.60
Rated speed rpm	: 500	+ Rated speed rpm : 1145
		Tolerance 1/min : +- 5
Pressure hPa	: 640	†
rack travel mm	: 13.85	†
Tolerance mm	: <del>+</del> 0.15	STARTING FUEL DELIVERY
Pressure hPa	: 440	T STARTING FOLL PLETVERT
rack travel mm	: 12.10	Rated speed rpm : 100
Tolerance mm	: ← 0.10	rack travel mm : 20.00
		+ Tolerance mm : +- 1.00
		+ Del. quantity
START CUT-OUT		+ cm3/1000 strokes : 172.0
		+ Tolerance
Rated speed rpm	: > 100	+ cm3/1000 strokes : + 8.0
Rated speed rpm	: < 270	+ Check tolerance
Ob a al.		+ cm3/1000s. : +- 11.0
Check	: > 80	Ť
speed 1/min Check	: > 80	I
speed 1/min	: < 290	I
speed (7/11/11)		I LOW IDLE
		1 504 1055

Del. quantity		
cm3/1000 strokes	:	15.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	5.5
Check tolerance		
cm3/1000s.	:	9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 09,04,96

Test oil

: ISO 4113

Combination No.

: 9 400 085 339

Injection pump

Pump designation : PES4A950410RS2774

EP type number

: 9 400 084 019

Governor

Governer design. : RQV300...1300AB1066

: -11L

Governer no.

: 9 420 080 309

Cust. part No. : 0200742602

Customer-spec. information

Customer

; MBB

Motor

: OM 364 LA

Power KW

: 100.0

### TEST BENCH REQUIREMENTS

Inlet line

: 3.1

Test oil inlet

temp. °C

Tolerance \*C

Overflow valve

: 1 419 992 198

Inlet press. bar :

Test nozzle holde

assembly

: 0 681 343 009

1.5

Opening pressure

173.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 015

Outside diameter :

6.0

G26

x inside diameter: 3.0

x length mm

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : + - 0.05

Tolerance mm Check

: + 0.10tolerance mm

Rack travel in mm : 10.50

Tolerance mm

· → 1.50

3.25

: 1-3-4-2 Firing order

Phasing

: 0-90-180-270

BASIC SETTING

Rated speed rpm 1300

11.55

Rack travel in mm : Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes :

103.0

Tolerance

cm3/1000 strokes : +-

1.0

Check tolerance cm3/1000s.

3.0

Spreed

Tolerance

cm3/1000 strokes :

3.5

Check tolerance

cm3/1000s.

8.0

Del. quantity		+ Tolerance	
cm3/1000 strokes	9.5	+ cm3/1000 strokes	: +- 1.0
Tolerance		+ Check tolerance	
cm3/1000 strokes	: <del>+-</del> 2.0	+ cm3/1000s.	: <del></del> 3.0
Check tolerance		Spreed	
cm3/1000s.	: +- 4.5	+ Tolerance	
Spreed	, ,,,	+ cm3/1000 strokes	: 3.5
Tolerance		+ Check tolerance	•
cm3/1000 strokes	: 5.5	+ cm3/1000s.	: 8.0
Check tolerance		1	
cm3/1000s.	: 9.0	1	
(1107 (000)	. 7.0	1	
		CONTROL LEVER	
(B) SETTING OF IN	LIECTION DUMP	1 SOLVINGE EEVEN	
WITH GOVERNOR	OCCITOIV : ON	control lever	
WITH GOVERNOR		+ position degree	. 47.0
		tolerance degree	
GUIDE SLEEVE TRAV	/E)	toterance degree	4.0
GOIDE SEEENE IKAN	/EL	T annual lavan	
Dahad assess was	. 1750	+ control lever	. 112.0
Rated speed rpm	: 1350	+ position degree	
guide sleeve	2.20	tolerance degree	: + 4.0
travel mm	: 8.20	†	
Tolerance mm	: + 0.10	+ RATED SPEED	
	4655	† ,	40.50
Rated speed rpm	: 1000	+ rack travel mm	: 10.50
guide sleeve		+ Rated speed rpm	: 1360 _
travel mm	: 5.75	† Tolerance 1/min	: +- 5
Tolerance mm	: +- 0.25	+	
		+ rack travel mm	: 4.00
Rated speed rpm	: 300	+ Rated speed rpm	
guide sleeve		+ Tolerance 1/min	: +- 15
travel mm	: 1.05	+	
Tolerance mm	: <del>+-</del> 0.25	+ rack travel mm	: 0.50
		+ Tolerance mm	: +- 0.50
Rated speed rpm	: 700	+ Rated speed rpm	: 1630
guide sleeve		1	
travel mm	: 4.25	1	
Tolerance mm	: +- 0.25		
TOTAL MITTER MAIN		LOW IDLE	
Rated speed rpm	: 1450	1	
guide sleeve	. 1-750	1	
travel mm	: 9.15	+ control lever	
Tolerance mm	: +- 0.25	position degree	: 68.0
loterance in	. + 0.2	tolerance degree	
		Totelance degree	. 1 4.0
CHINE OF EERE DOOL	TTON	‡ control lever	
GUIDE SLEEVE POSI	ITOM		: 20.0
Dakad amang man	. 1705	+ position degree	
Rated speed rpm	: 1395	tolerance degree	; +- 4.0
Danis Americal descrip-	. 16 50	Tanking	
Rack travel in mm		† Testing:	
Tolerance mm	: +- 1.30	T president to the	700
		+ Rated speed rpm	: 300
		+ rack travel mm	: 7.00
FULL LOAD DELIVER	Y AT FULL LOAD STOP	† Tolerance mm	: + 0.10
		+	
Rated speed rpm	: 1300	+ Rated speed rpm	: 100
Aneroid pressure		+	
hPa	: 800	+ CRT mm min.	: > 9.00
Del. quantity		+	
cm3/1000 strokes	: 103.0	+ Rated speed rpm	: 525

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		†
		+ Aneroid pressure
TORQUE CONTROL		+ hPa : 800
Datad speed spe	: 1300	+ Rated speed rpm : 700 + Del. quantity
Rated speed rpm rack travel mm		+ cm3/1000 strokes : 98.5
Tolerance mm	+- 0.05	+ Tolerance
TOTAL INC. IMI		+ cm3/1000 strokes : + 2.0
Rated speed rpm	: 700	- Check tolerance
rack travel mm		+ cm3/1000s. : + 4.0
Tolerance mm	: +- 0.05	+
		+ Aneroid pressure
Rated speed rpm	: 1100_	+ hPa : -
rack travel mm		+ Rated speed rpm : 500
Tolerance mm	: +- 0.05	+ Del. quantity
Detect exect eve	. 050	+ cm3/1000 strokes : 61.0
Rated speed rpm	: 90U . 44.0E	+ Tolerance
rack travel mm Tolerance mm	: 11.95 : +- 0.05	cm3/1000 strokes : +- 1.0 Check tolerance
roterance mm	. *** 0.03	+ cm3/1000s. : + 3.0
		T (11107 (1000). T 3.0
ANEROID/ALTITUDE		
COMPENSATOR TEST		+ BREAKAWAY
		+
		+
SETTING		+ Rack travel in mm: 10.50
		+ Rated speed rpm : 1360
Rated speed rpm	: 500	+ Tolerance 1/min : +- 5
Pressure hPa	: 800	+
rack travel mm	: 11.95	†
Tolerance mm	: +- 0.05	CTARTANC FUEL DEL TUERV
MEASUREMENT		+ STARTING FUEL DELIVERY
MEASUREMENT		Rated speed rpm : 100
Pressure hPa	• -	rack travel mm : 13.40
Rated speed rpm	500	+ Tolerance mm : + 0.10
adeja opeca i pii	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	+ Del. quantity
Rated speed rpm	: 500	+ cm3/1000 strokes : 86.0
		+ Tolerance
Pressure hPa	: 500	+ cm3/1000 strokes : + 7.5
rack travel mm	: 1.55	+ Check tolerance
Tolerance mm	: +- 0.15	+ cm3/1000s. : + 10.0
		†
Pressure hPa	: 380	+
rack travel mm	: 0.50	†
Tolerance mm	: +- 0.10	LOUE
		+ LOW IDLE
START CUT-OUT		T Del. quantity
START COFFOUR		- cm3/1000 strokes : 9.5
Rated speed rpm	: > 100	Tolerance
		+ cm3/1000 strokes : +- 2.0
		- Check tolerance
Rated speed rpm	. 5-5	T CHECK EDIEL GIVE
Rated speed rpm		
Rated speed rom Theck		+ cm3/1000s. : +- 4.5
Rated speed rom Check speed 1/min		+ cm3/1000s. : +- 4.5 + Spreed
Rated speed rom Check speed 1/min Check	: > 80	+ cm3/1000s. : +- 4.5
Rated speed rom Check speed 1/min	: > 80	- cm3/1000s. : +- 4.5 - Spreed - Tolerance

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 340

Injection pump

Pump designation : PES6A95D410RS2795 EP type number : 9 400 084 020

Governor

Governer design. : RSV350...1250A0C1150

: -5L

Governer no. : 9 420 083 258

Cust. part No. :

Customer-spec. information

Customer : MBB
Motor : OM 366

Power KW : 94.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.25

Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 8.65
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 63.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 8.0

Del. quantity cm3/1000 strokes	: 12.0
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance cm3/1000s.	: <del>←</del> 4.5
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 5.5
cm3/1000s.	: 9.0
(B) SETTING OF IN	JECTION PUMP
GUIDE SLEEVE POSI	TION
Rated speed rpm	: 800
Rack travel in mm Tolerance mm	: 0.65 : +- 0.35
governor spring pre-tension click setting x	: 5.00
FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rated speed rpm	Y AT FULL LOAD STOP : 1250
Rated speed rpm Aneroid pressure hPa	
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: 1250 : -
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1250 : - : 63.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1250 : - : 63.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 1250 : - : 63.5 : +- 1.0 : +- 3.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1250 : - : 63.5 : + 1.0 : + 3.0 : 3.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 1250 : - : 63.5 : +- 1.0 : +- 3.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1250 : - : 63.5 : + 1.0 : + 3.0 : 3.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1250 : - : 63.5 : + 1.0 : + 3.0 : 3.5 : 8.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1250 : - : 63.5 : + 1.0 : + 3.0 : 3.5 : 8.0

rack travel mm	
Rated speed rpm Tolerance 1/min	: 1347
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1500
LOW IDLE	
control lever position degree tolerance degree	: 82.0 : +- 4.0
Setting point w/c	out bumper spring
Rated speed rpm rack travel mm	: 350 : 6.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 7.00 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 475
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	**************************************
Rated speed rpm rack travel mm Tolerance mm	: 1250 : 8.65 : +- 0.05
Rated speed rpm rack travel mm	: 500 : 8.70 : +- 0.10
Tolerance mm	0.10

Tolerance 1/min : +- 5

Rack travel in mm	:	7.60
Rated speed rpm	:	1295
Tolerance 1/min	•	+ 5

# STARTING FUEL DELIVERY

Rated speed rpm	: 100
rack travel mm	: 14.20
Tolerance mm	: <b>←</b> 0.10
Del. quantity	
cm3/1000 strokes	: 101.5
Tolerance	
cm3/1000 strokes	: +- 7.5
Check tolerance	
cm3/1000s.	: + 10.0

# LOW IDLE

51101 1000 511 511C5	'. •	12.0	
Tolerance cm3/1000 strokes	: +-	2.0	
Check tolerance cm3/1000s.	: +-	4.5	
Spreed	•		
Tolerance cm3/1000 strokes	:	5.5	
Check tolerance cm3/1000s.	:	9.0	

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 341

Injection pump

Pump designation : PES4A95D410RS2805 EP type number : 9 400 084 026

Governor

Governer design. : RSV350...1300A0C1150

: -6L

Governer no. : 9 420 083 257

Cust. part No.

Customer-spec. information
Customer : MBB
Motor : OM 364
Power KW : 60.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : +- 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 9.45
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 59.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed Tolerance

cm3/1000 strokes :

3.5

Check tolerance

cm3/1000s. : 8.0

Del. quantity			+		
cm3/1000 strokes	:	9.0	+	rack travel mm	: 4.00
Tolerance		2.0	†	Rated speed rpm	
cm3/1000 strokes	: +-	2.0	+	Tolerance 1/min	: +- 15
Check tolerance		, <u>r</u>	†	mante descriptions	. 0.05
cm3/1000s.	; +-	4.5	†	rack travel mm	: 0.85
Spreed			<b>†</b>	Tolerance mm	: + 0.55
Tolerance		r c	†	Rated speed rpm	: 1550
cm3/1000 strokes	:	5.5	<b>T</b>		
Check tolerance cm3/1000s.	•	9.0	<b>T</b>		
CM37 TUDUS.	•	9.0	Ţ	LOW IDLE	
			I	LOW INCE	
(B) SETTING OF IN	JECTION	DLIMD	Ι		
WITH GOVERNOR	OFCITOIA	FOME	Ι	control lever	
WITH GOVERNOR			I	position degree	: 82.0
			1	tolerance degree	
-	·		1	totti unite degree	• • •••
GUIDE SLEEVE POSIT	TION		1	Setting point w/o	out bumper spring
002/2 002010 1 002	. 2011		1	Totaling point in	
Rated speed rpm	: 80	00	1	Rated speed rpm	: 350
			1	rack travel mm	
Rack travel in mm	: (	0.65	+		
Tolerance mm	: +- (	<b>0.3</b> 5	1	Testing:	
			+	J	
governor spring			+	Rated speed rpm	: 350
pre-tension			+	rack travel mm	: 7.50
click setting x	: 2	4.75	+	Tolerance mm	: <b>+</b> 0.10
			+		
		<del></del>	+	rack travel mm	: 2.00
FULL LOAD DELIVERY	Y AT FUL	LL LOAD STOP	+	Rated speed rpm	
			+	Tolerance 1/min	: +- 30
Rated speed rpm	: 130	00	+		
Aneroid pressure			+	Rated speed rpm	: 100
hPa	:	_	†		. 40.00
Del. quantity		-0 F	†	CRT mm min.	: > 19.00
cm3/1000 strokes	:	59.5	†		
Tolerance		1 0	†	TODOUC CONTROL	
cm3/1000 strokes	; +-	1.0	Ť	TORQUE CONTROL	
Check tolerance cm3/1000s.	• 4	3.0	Ι	Rated speed rpm	: 1300
Spreed	•	3.0	I	rack travel mm	: 9.45
Tolerance			Ι	Tolerance mm	: +- 0.05
cm3/1000 strokes	•	3.5	1	TOTAL MINI	0.05
Check tolerance	•	0.5	1	Rated speed rpm	: 500
cm3/1000s.	•	8.0	1	rack travel mm	9.50
	•	***	1	Tolerance mm	: + 0.10
			1		
			1	Rated speed rpm	: 400
CONTROL LEVER			+	rack travel mm	: 10.90
			+	Tolerance mm	: +- 0.30
control lever			+		
position degree		11.0	+		
tolerance degree	: +	4.0	+		
			+		
RATED SPEED			+		
	_		+	DDD 41/41/41	
rack travel mm		3.40	†	EREAKAWAY	
Rated speed rpm	: 134		†		
Tolerance 1/min	: +	5	+		

Rack travel in mm	:	8.40
Rated speed rpm	;	1345
Tolerance 1/min	:	+- 5

# STARTING FUEL DELIVERY

Rated speed rpm	: 100
rack travel mm	: 14.90
Tolerance mm	: ← 0.10
Del. quantity	
cm3/1000 strokes	: 94.0
Tolerance	
cm3/1000 strokes	; <del></del>
Check tolerance	
cm3/1000s.	: +- 10.0

# LOW IDLE

01107 1000 OC1 01100	:	9.0
Tolerance cm3/1000 strokes	: +-	2.0
Check tolerance cm3/1000s.	: +-	4.5
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	5.5
cm3/1000s.	:	9.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 : ISO 4113 Test oil

Combination No. : 9 400 085 351

Injection pump

Pump designation : PES6A95D410RS2772 EP type number : 9 400 084 018

Governor

Governer design. : RQV300...1300AB1066

: -13L

: 9 420 080 332 Governer no.

Cust. part No. :

Customer-spec. information Customer : MBB

Motor : OM 366 LA Power KW : 150.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar

: 1 680 750 015 Test Lines

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +-

Prestroke mm 3.25 Tolerance mm : + - 0.05Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : **←** 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

# BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 11.45 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 104.0

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. 2.5

Spreed Tolerance

cm3/1000 strokes :

3.5

8.0

Check tolerance cm3/1000s.

1	Spreed
Del. quantity	Tolerance
cm3/1000 strokes : 11.0	cm3/1000 strokes : 3.5
Tolerance	Check tolerance
cm3/1000 strokes : +- 2.0 +	cm3/1000s. : 8.0
Check tolerance	
cm3/1000s. : +- 4.5	
Spreed	
Tolerance	CONTROL LEVER
cm3/1000 strokes : 5.5	CONTROL LEVER
Check tolerance	control lever
cm3/1000s. : 9.0	position degree : 60.0
CIID/ (000). ; 9.0 †	tolerance degree : + 4.0
T	toterance degree : +- 4.0
(D) CETTAIC OF TALLECTION DUMP	control loves
(B) SETTING OF INJECTION PUMP	control lever
WITH GOVERNOR +	position degree : 109.0
†	tolerance degree : +- 4.0
CHARL OF THE TRAVEL	DATES OFFI
GUIDE SLEEVE TRAVEL	RATED SPEED
Dated annual arm at 700	most during mm = 40 /0
Rated speed rpm : 300	rack travel mm : 10.60
guide sleeve	Rated speed rpm : 1360
travel mm : 1.05 +	Tolerance 1/min : + 5
Tolerance mm : + 0.25 +	
<b></b>	rack travel mm : 4.00
Rated speed rpm : 1500 +	Rated speed rpm : 1505
guide sleeve	Tolerance 1/min : + 15
travel mm : 8.55	
Tolerance mm : + 0.05 +	rack travel mm : 0.50
+	Tolerance mm : + 0.50
Rated speed rpm : 500 +	Rated speed rpm : 1650
guide sleeve +	
travel mm : 2.55	
Tolerance mm : + 0.25 +	
+	LOW IDLE
Rated speed rpm : 750 +	
guide sleeve	
travel mm : 4.20 +	control lever
Tolerance mm : +- 0.10 +	position degree : 68.0
+	tolerance degree : + 4.0
	<del>-</del>
GUIDE SLEEVE POSITION +	control lever
<del> </del>	position degree : 19.0
Rated speed rpm : 1500	tolerance degree : + 4.0
1	•
Rack travel in mm: 16.50	Testing:
Tolerance mm : +- 1.30 +	<b>G</b>
+	Rated speed rpm : 300
	rack travel mm : 7.00
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.10
1	
Rated speed rpm : 1300 +	Rated speed rpm : 100
Aneroid pressure	
hPa : 900 +	CRT mm min. :> 8.00
Del. quantity	
cm3/1000 strokes : 104.0	Rated speed rpm : 375
Tolerance	the second second of the second secon
cm3/1000 strokes : +- 0.5	
	TORQUE CONTROL
Check tolerance cm3/1000s. : + 2.5	TORQUE CONTROL

Rated speed rpm : 500	Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST	: 11.45 : +- 0.05 : 800 : 11.45 : +- 0.05	Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0  BREAKAWAY
Rated speed rpm : 500 Pressure hPa : 900 rack travel mm : 11.45 Tolerance mm : + 0.05  MEASUREMENT  Pressure hPa : - Rated speed rpm : 100 Rated speed rpm : 500  Rated speed rpm : 500  Rated speed rpm : 500  Rated speed rpm : 500  Rated speed rpm : 500  Rated speed rpm : 500  Rated speed rpm : 500  Pressure hPa : 340 rack travel mm : 0.49 rack travel mm : 0.40 rack travel mm : + 0.10  Pressure hPa : 560 rack travel mm : 1.35 Tolerance mm : + 0.05  START CUT-OUT  Rated speed rpm : > 100 Rated speed rpm : > 100 Rated speed rpm : > 220  Check speed 1/min : > 80 Check speed 1/min : > 80 Check speed 1/min : < 240  Aneroid pressure hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : + 4.5 Spreed Check tolerance cm3/1000s. : 9.0  Aneroid pressure hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance	SETTING		
Rated speed rpm : 100	Pressure hPa rack travel mm	: 900 : 11.45	+ Rated speed rpm : 1360
Rated speed rpm : 500  Rated speed rpm : 500  Rated speed rpm : 500  Pressure hPa : 340  rack travel mm : + 0.10  Del. quantity  cm3/1000 strokes : 76.5  Tolerance  rack travel mm : 0.40  Tolerance mm : + 0.10  Pressure hPa : 560  rack travel mm : 1.35  Tolerance mm : + 0.05   Pressure hPa : 560  rack travel mm : 1.35  Tolerance mm : + 0.05   LOW IDLE  START CUT-OUT  Rated speed rpm : > 100  Rated speed rpm : > 220  Check  speed 1/min : > 80  Check speed 1/min : > 80  Check speed 1/min : < 240  Aneroid pressure hPa : 900 Rated speed rpm : 800  Del. quantity  cm3/1000 strokes : 5.5  Check tolerance  cm3/1000 strokes : 9.0  Aneroid pressure hPa : 900 Rated speed rpm : 800  Del. quantity  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5  Tolerance  cm3/1000 strokes : 94.5	MEASUREMENT		STARTING FUEL DELIVERY
Rated speed rpm : 500  Pressure hPa : 340 rack travel mm : 0.40 Tolerance rack travel mm : 0.40 Tolerance mm : + 0.10  Pressure hPa : 560 rack travel mm : 1.35 Tolerance mm : + 0.05   START CUT-OUT  Rated speed rpm : > 100 Rated speed rpm : > 220  Check speed 1/min : > 80 Check speed 1/min : < 240  Aneroid pressure hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : + 4.5 Check tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 9.0  Aneroid pressure hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 9.0  End of test specification sheet Check tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 9.0		: – : 500	rack travel mm : 12.90
rack travel mm : 0.40 Tolerance mm : + 0.10  Pressure hPa : 560 rack travel mm : 1.35 Tolerance mm : + 0.05   START CUT-OUT  Rated speed rpm : > 100 Rated speed rpm : < 220  Check speed 1/min : > 80 Check speed 1/min : < 240  Aneroid pressure hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000 strokes : 9.0  Aneroid pressure hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance Cm3/1000 strokes : 94.5 Tolerance	Rated speed rpm	: 500	+ Del. quantity
Pressure hPa : 560 rack travel mm : 1.35 Tolerance mm : + 0.05	rack travel mm	: 0.40	Tolerance cm3/1000 strokes : +- 7.5 Check tolerance
Del. quantity	rack travel mm	: 1.35	+ cm3/1000s. : +- 10.0
Rated speed rpm : > 100 Rated speed rpm : < 220  Check speed 1/min : > 80 Check speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  End of test specification sheet	START CUT-OUT		LOW IDLE
Check speed 1/min : > 80 Check speed 1/min : > 80 Check speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : + 2.0 Check tolerance  End of test specification sheet	Rated speed rpm		+ cm3/1000 strokes : 11.0
speed 1/min : > 80 Check speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : 94.5  Tolerance cm3/1000 strokes : + 2.0 Check tolerance  End of test specification sheet		. 551	+ cm3/1000 strokes : + 2.0
speed 1/min : < 240  Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : 9.0  Aneroid pressure hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 94.5 Tolerance cm3/1800 strokes : + 2.0 Check tolerance	speed 1/min	: > 80	+ cm3/1000s. : +- 4.5
Aneroid pressure hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 94.5 Tolerance cm3/1800 strokes : + 2.0 Check tolerance  cm3/1000s. : 9.0  cm3/1000s. : 9.0  End of test specification sheet		: < 240	Tolerance cm3/1000 strokes : 5.5
hPa : 900 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 94.5 Tolerance	FUEL DELIVERY CHA	ARACTERISTICS	
cm3/1000 strokes : 94.5  Tolerance End of test specification sheet cm3/1000 strokes : + 2.0 Check tolerance	hPa Rated speed rpm		<del>†</del>
Check tolerance +	cm3/1000 strokes Tolerance		End of test specification sheet
	Check tolerance		<del>+</del> +

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 10.04.96 : ISO 4113

Combination No. : 9 400 085 355

Injection pump

Pump designation : PES6A100D120RS2841

EP type number : 9 400 084 033

Governor

Governer design. : RQV350...1400AB1272R

Governer no. : 9 420 080 344

Cust. part No. : 3355313

Customer-spec. information Customer : CUMMINS Motor : 6 BT 140 Power KW : 105.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

: 40 : +- 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar

Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.90 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50 Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm: 8.85 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 81.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

	+ Tolerance
Spreed	+ cm3/1000 strokes : +- 1.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 3.5	+ cm3/1000s. : +- 3.0
	+ Spreed
Check tolerance	+ Tolerance
cm3/1000s. : 6.0	+ cm3/1000 strokes : 3.5
Nal manada.	theck tolerance
Del. quantity cm3/1000 strokes : 7.0	- cm3/1000s. : 6.0
Talerance	Ī
cm3/1000 strokes : +- 2.0	
Check tolerance	↓ CONTROL LEVER
cm3/1000s. : + 4.0	+
Spreed	+ control lever
Tolerance	+ position degree : 51.0
cm3/1000 strokes : 3.5	+ tolerance degree : +- 4.0
Check tolerance	†
cm3/1000s. : 5.5	+ control lever
	<pre>position degree : 106.0 tolerance degree : + 4.0</pre>
(B) SETTING OF INJECTION PUMP	tolerance degree : +- 4.0
WITH GOVERNOR	T RATED SPEED
MILLI GOATIMON	1
	—       → rack travel mm : 7.80
GUIDE SLEEVE TRAVEL	Rated speed rpm : 1473
	+ Tolerance 1/min : + 8
Rated speed rpm : 1400	†
guide steeve	+ rack travel mm : 4.00
travel mm : 6.50	+ Rated speed rpm : 1635
Tolerance mm : +- 0.10	† Tolerance 1/min : +- 15
Rated speed rpm : 1000	Track travel mm : 0.50
guide steeve	+ Tolerance mm : +- 0.50
travel mm : 4.95	Rated speed rpm : 1800
Tolerance mm : +- 0.25	+
	+
Rated speed rpm : 350	
guide sleeve	+ LOW IDLE
travel mm : 1.95	†
Tolerance mm : +- 0.25	t control loven
Rated speed rpm : 600	+ control lever + position degree : 71.0
guide steeve	tolerance degree : +- 4.0
travel mm : 3.95	1
Tolerance mm : + 0.25	+ control lever
	+ position degree : 16.0
Rated speed rpm : 1650	tolerance degree : +- 4.0
guide sleeve	† <u> </u>
travel mm : 7.75	Testing:
Tolerance mm : +- 0.25	Rated speed rpm : 350
FULL LOAD DELIVERY AT FULL LOAD STOP	- + rack travel mm : 4.90 + Tolerance mm : + 0.10
. The body beattern in 1 dee body of Ol	-
Rated speed rpm : 1400	Rated speed rpm : 100
Aneroid pressure	+
hPa : -	+ CRT mm min. :> 9.00
Del. quantity	†
cm3/1000 strokes : 81.0	+ Rated speed rpm : 450

## TORQUE CONTROL

: 1400 Rated speed rpm rack travel mm 8.85 : + 0.05 Tolerance mm

: 800 Rated speed rpm rack travel mm : 8.85 ; +- 0.05 Tolerance mm

# START CUT-OUT

100 Rated speed rpm : > Rated speed rpm : < 270

Check

speed 1/min 80 : >

Check

speed 1/min : < 290

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm : 800

Del. quantity cm3/1000 strokes : 83.0

Tolerance

cm3/1000 strokes : +-1.5

Check tolerance

cm3/1000S.4.0

### BREAKAWAY

7.80 Rack travel in mm : Rated speed rpm : 1473 Tolerance 1/min : +-

## STARTING FUEL DELIVERY

Rated speed rpm : 100 20.00 rack travel mm : : +- 1.00 Tolerance mm Del. quantity

cm3/1000 strokes : 173.0

Tolerance

cm3/1000 strokes : + 7.0

Check tolerance

: + 10.0cm3/1000s.

## LOW IDLE

Del. quantity cm3/1000 strokes	:	7.0
Tolerance cm3/1000 strokes Check tolerance	: +-	2.0
cm3/1000s.	: +-	4.0
Tolerance cm3/1000 strokes	:	3.5
Check tolerance cm3/1000s.	:	5.5

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 356

Injection pump

Pump designation : PES6A85D410RS2756 EP type number : 9 400 093 006

Governor

Governer design. : RSV325...1150A1C1165

: 9 420 083 290 Governer no.

Cust. part No. :

Customer-spec. information Customer : DEUTZ ARG. : BF6L913 Motor : 118.0

Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar : +- 1.5 Tolerance bar

: 1 680 750 003 Test lines

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : **KNN** 

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

# BEGINNING OF DELIVERY

Test pressure bar : 32.0 Tolerance bar : +- 1.0

: 1.95 Prestroke mm : + 0.05Tolerance mm Check

: + 0.10tolerance mm

Rack travel in mm: 10.50 : +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm: 11.35 : +- 0.05

Tolerance mm

Del. quantity cm3/1000 strokes :

73.0

Tolerance

cm3/1000 strokes : +-0.5

Check tolerance

cm3/1000s. : +-2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. 7.0

No. 1	+
Del. quantity	†
cm3/1000 strokes : 11.0	†
Tolerance cm3/1000 strokes : +- 2.0	Ť
Check tolerance	Ť
cm3/1000s. : +- 4.0	T
Spreed 4.0	T
Tolerance	T
cm3/1000 strokes : 4.5	T
Check tolerance	I
cm3/1000s. : 7.0	I
(1137 10000: 1.0	1
	1
(B) SETTING OF INJECTION PUMP	1
WITH GOVERNOR	1
	1
	1
	- 🗼
GUIDE SLEEVE POSITION	+
	+
Rated speed rpm : 800	+
	+
Rack travel in mm : 0.65	+
Tolerance mm : +- 0.35	+
	+
governor spring	+
pre-tension	+
click setting $x : 5.00$	+
	+
FILL LOAD DELYHEDV AT FILL LOAD OTOD	†
FULL LOAD DELIVERY AT FULL LOAD STOP	· ‡
·	† 
Rated speed rpm : 1150	+ + +
Rated speed rpm : 1150 Aneroid pressure	† † † †
Rated speed rpm : 1150 Aneroid pressure hPa : -	+++++++++++++++++++++++++++++++++++++++
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity	+ + + + + + + + + + + + + + + + + + + +
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0	+ + + + + + + + + + + + + + + + + + + +
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance	+ + + + + + + + + + + + + + + + + + + +
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : +- 0.5	+ + + + + + + + + + + + + + + + + + + +
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance	+ + + + + + + + + + + + + + + + + + + +
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5	
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed	
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance	****
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0	*****
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	* <del>************************************</del>
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0	*****
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	*****
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	<del>┤</del> <del>┤</del> <del>┤</del> <del>┤</del> <del>┤</del> <del>│</del> <del>│</del> <del>│</del> <del>│</del> <del>│</del> <del>│</del> <del>│</del> <del>│</del> <del>│</del> <del>│</del>
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000 strokes : 7.0	<del>╏╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸</del>
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance	* <del>************************************</del>
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000 strokes : 7.0	* <del>************************************</del>
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000 strokes : 7.0	* <del>************************************</del>
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000 strokes : 7.0  CONTROL LEVER control Lever	* <del>************************************</del>
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 7.0  CONTROL LEVER control lever position degree : 114.0	<del>┤</del> ╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇╇
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 7.0  CONTROL LEVER control lever position degree : 114.0	<del>╵╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸</del> <del>╸</del>
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000 strokes : 7.0  CONTROL LEVER  control lever position degree : 114.0 tolerance degree : + 4.0  RATED SPEED	<del>╵╸╸╸╸╸╸╸╸╸╸╸╸╸</del> <del>╸╸╸╸╸╸╸╸</del>
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000 strokes : 7.0  CONTROL LEVER  control lever position degree : 114.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.30	<del>╵╸╸╸╸╸╸╸╸╸╸╸╸╸╸</del> <del>╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸</del>
Rated speed rpm : 1150 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 73.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000 strokes : 7.0  CONTROL LEVER  control lever position degree : 114.0 tolerance degree : + 4.0  RATED SPEED	<del>╏╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸</del> <del>╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸╸</del>

rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1235 : + 15
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1380
LOW IDLE	
control lever position degree tolerance degree	: 77.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm rack travel mm	: 325 : 7.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 325 : 8.00 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 570 : + 30
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 11.35 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 13.05 : +- 0.05
	: 800 : 12,35

Tolerance 1/min : + 5

Aneroid pressure	
hPa Rated speed rpm	500
Del. quantity cm3/1000 strokes	; 79.5
Tolerance cm3/1000 strokes	: + 1.5
Check tolerance cm3/1000s.	: +- 3.5
	; +- 3.3
Aneroid pressure	:
Rated speed rpm Del. quantity	
cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance	: +- 1.5
cm3/1000s.	: +- 3.5
BREAKAWAY	
Rack travel in mm Rated speed rpm	
Tolerance 1/min	: +- 5
STARTING FUEL DEL	TVFRY
Rated speed rpm	
rack travel mm Tolerance mm	: 20.00 : +- 1.00
LOW IDLE	
Del. quantity cm3/1000 strokes	: 11.0
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s.	: +- 4.0
Spreed Tolerance	
	: 4.5
cm3/1000s.	: 7.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 : ISO 4113 Test oil

Combination No. : 9 400 085 364

Injection pump

Pump designation : PES6A100D120RS2849 EP type number : 9 400 084 035

Governor

Governer design. : RSV450...900A1C2270R

Governer no. : 9 420 083 294

Cust. part No. : 3355362

Customer-spec. information Customer : CUMMINS Motor : 6 BT : 124.0 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 2.80 : +- 0.05 Tolerance mm Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

10.50 travel Tolerance mm : +- 1.50 Difference \* CS : 4.00

## BASIC SETTING

Rated speed rpm 850

Rack travel in mm : 10.35 : + 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 119.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

		£		
Spreed		I	control lever	
Tolerance		1	position degree	: 93.0
cm3/1000 strokes	: 3.5	+	tolerance degree	
		+	•	
Check tolerance		+		
cm3/1000s.	: 8.0	+	ASSEMBLY GOVERNOR	SETTING
Nat manada		†	Dakad an and man	- 045
Del. quantity cm3/1000 strokes	: 23.0	†	Rated speed rpm rack travel mm	: 915 : 9.30
Tolerance	: 23.0	I	rack travet mm	: 9.30
cm3/1000 strokes	: +- 2,0	1	Rated speed rpm	: 944
Check tolerance		+	Tolerance 1/min	: +- 4
cm3/1000s.	: +- 4.5	+	rack travel mm	: 4.00
Spreed		+		
Tolerance		+	rack travel mm	: 0.85
cm3/1000 strokes	: 5.5	+	Tolerance mm	: +- 0.55
Check tolerance cm3/1000s.	; 9.0	<b>T</b>	Rated speed rpm	: 1000
CIIDA (ODOS.	: 9.0	I	Rated speed rpm	: 916
		I	rack travel mm	9.30
(B) SETTING OF IN	JECTION PUMP	1	· doi: or dyoc iiiii	. ,,,,,
WITH GOVERNOR		+	Rated speed rpm	945
		+	Tolerance 1/min	: +- 4
		+	rack travel mm	: 4.00
CHINE OF EERE DOOL	FTON	†	manic described was	
GUIDE SLEEVE POSI	I TOIA	I	rack travel mm Tolerance mm	: 0.85 : + 0.55
Rated speed rpm	: 800	I	Rated speed rpm	: 1000
Marca Speca (pm	. 000	1	nacca speca i piii	. 1000
Rack travel in mm	: 0.65	+	Rated speed rpm	: 917
Tolerance mm	: <b>-</b> 0.35	+	rack travel mm	: 9.30
•		+		
governor spring		†	Rated speed rpm	: 946
pre-tension click setting x	: 3.50	I	Tolerance 1/min rack travel mm	: <del>+-</del> 4 : 4.00
certains x	. 3.30	I	Tack Cravet iiii	. 4.00
		1	rack travel mm	: 0.85
FULL LOAD DELIVERY	Y AT FULL LOAD STOP	+	Tolerance mm.	: +- 0.55
		+	Rated speed rpm	: 1000
Rated speed rpm	: 850	+		64.0
Aneroid pressure		†	Rated speed rpm	: 918
hPa Del. quantity	-	Ī	rack travel mm	: 9.30
cm3/1000 strokes	: 119.0	I	Rated speed rpm	: 947
Tolerance	. 177.5	1	Tolerance 1/min	: <del>+-</del> 4
cm3/1000 strokes	: +- 1.0	+	rack travel mm	: 4.00
Check tolerance		+		
cm3/1000s.	: <del>←</del> 3.0	+	rack travel mm	: 0.85
Spreed		†	Tolerance mm	: +- 0.55
Tolerance	: 3.5	+	Rated speed rpm	: 1000
cm3/1000 strokes Check tolerance	: 3.5	I	Rated speed rpm	: 919
cm3/1000s.	: 8.0	I	rack travel mm	9.30
511127 1 GGGG .		1	. GOT OF GYOL HAR	. ,
		+	Rated speed rpm	948
		+	Tolerance 1/min	: +- 4
CONTROL LEVER		+	rack travel mm	: 4.00
		†	made democrat	. 005
		+	rack travel mm	: 0.85

Tolerance mm	: ← 0.55
Rated speed rpm	: 1000
Rated speed rpm	: 920
rack travel mm	: 9.30
Rated speed rpm	: 949
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1000

### LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450 rack travel mm : 4.10

## Testing:

Rated speed rpm : 450 rack travel mm : 4.60 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

## TORQUE CONTROL

Rated speed rpm : 850 rack travel mm : 10.35 Tolerance mm : + 0.05

Rated speed rpm : 550 rack travel mm : 10.40 Tolerance mm : +- 0.10

Rated speed rpm : 400 rack travel mm : 11.60 Tolerance mm : +- 0.30

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 169.0 Tolerance cm3/1000 strokes : + 8.0 Check tolerance cm3/1000s. : + 11.0

## LOW IDLE

Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 : +-Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 3640J

Injection pump

Pump designation : PES6A100D120RS2849 EP type number : 9 400 084 035

Governor
Governer design. : RSV450...900A1C2270R

Governer no. : 9 420 083 294

Cust. part No. : 3355363-VERSA039

Customer—spec. information Customer : CUMMINS Motor : 6 BT Power KW : 101.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : +- 1.50
Difference ° CS : 4.00

BASIC SETTING

Rated speed rpm : 870

Rack travel in mm : 8.95
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 95.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

		+			
Spreed		+	control lever		07.0
Tolerance cm3/1000 strokes	. 75	İ	position degree tolerance degree	:	93.0
CHOT IDOU SCIORES	. 3.3	I	toterance degree	. 1-	4.0
Check tolerance		1			
	: 8.0	+	ASSEMBLY GOVERNOR	SETT.	ING
		+			
Del. quantity	07.0	+	Rated speed rpm		915
	: 23.0	†	rack travel mm	:	7.90
Tolerance cm3/1000 strokes	: <del>+</del> 2.0	Ī	Rated speed rpm	•	936
Check tolerance		I	Tolerance 1/min		4
cm3/1000s.	: +- 4.5	1	rack travel mm		4.00
Spreed		+			
Tolerance		+	rack travel mm	:	0.85
	: 5.5	+	Tolerance mm	: +-	0.55
Check tolerance	: 9.0	†	Rated speed rpm	:	1000
cm3/1000s.	: 9.0	I	Rated speed rpm	•	916
		I	rack travel mm	•	7.90
(B) SETTING OF INJ	ECTION PUMP	1	ruon cravet iim	•	
WITH GOVERNOR		+	Rated speed rpm		937
		+	Tolerance 1/min	: +-	4
		+	rack travel mm	:	4.00
GUIDE SLEEVE POSIT	TON	†	rack travel mm		0.85
GOIDE STEERE BOST!	TOIA	I	Tolerance mm	• +	0.55
Rated speed rpm	: 800	I	Rated speed rom	• `	1000
Water phone chim		1	reader alabeet them	•	, 555
Rack travel in mm		+	Rated speed rpm		917
Tolerance mm	: <del>+-</del> 0.35	+	rack travel mm	:	7.90
		†	Data damas dama	_	070
governor spring pre-tension		<b>T</b>	Rated speed rpm Tolerance 1/min	:	938 4
click setting x	: 3.50	I	rack travel mm		4.00
ottok octomig x		1	Table C. arec man	•	
		÷	rack travel mm	:	0.85
FULL LOAD DELIVERY	AT FULL LOAD STOP	+	Tolerance mm		0.55
Datas as and man	. 970	†	Rated speed rpm	:	1000
Rated speed rpm Aneroid pressure	: 870	Ī	Rated speed rpm	•	918
hPa	•	I	rack travel mm	•	7.90
Del. quantity	•	1	. 451( 51 41 55 11111	•	
cm3/1000 strokes	95.5	+	Rated speed rpm	:	939
Tolerance		+	Tolerance 1/min	: +-	4
cm3/1000 strokes	: <b>←</b> 1.0	†	rack travel mm	:	4.00
Check tolerance cm3/1000s.	: +- 3.0	1	rack travel mm	•	0.85
Spreed	. +- J.U	I	Tolerance mm	•	0.55
Tolerance		1	Rated speed rpm	:	1000
- 14.00- 1	: 3.5	+			
Check tolerance		+	Rated speed rpm	:	919
cm3/1000s.	: 8.0	†	rack travel mm	:	7.90
		İ	Pated speed not		940
		I	Rated speed rpm Tolerance 1/min	• +	4
CONTROL LEVER		1	rack travel mm	:	4.00
Continue of the Party		+		-	
		+	rack travel mm	:	0.85

: +- 0.55 Tolerance mm 1000 Rated speed rom 920 Rated speed rpm : rack travel mm 7,90 941 Rated speed rpm Tolerance 1/min 4 4.00 rack travel mm rack travel mm 0.85 : +- 0.55 Tolerance mm Rated speed rom 1000

#### LOW IDLE

control lever position degree : 74.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450 rack travel mm : 4.10

### Testing:

Rated speed rpm : 450 rack travel mm : 4.60 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

#### TORQUE CONTROL

Rated speed rpm : 870 rack travel mm : 8.95 Tolerance mm : + 0.05

Rated speed rpm : 550 rack travel mm : 9.00 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 10.70 Tolerance mm : + 0.30

### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 169.0
Tolerance
cm3/1000 strokes : + 8.0
Check tolerance
cm3/1000s : + 11.0

### LOW IDLE

Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 364EH

Injection pump

Pump designation : PES6A100D120RS2849

EP type number : 9 400 084 035

Governor

Governer design. : RSV450...900A1C227OR

Governer no. : 9 420 083 294

Cust. part No. : 3355525-VERSA047

Customer—spec. information Customer : CUMMINS Motor : 6 BT Power KW : 85.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference °CS : 4.00

#### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 8.35
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 92.5

Tolerance cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : + 3.0

Spreed		Ŧ	control lever		
Tolerance cm3/1000 strokes	: 3.5	†	position degree tolerance degree		87.0 4.0
Check tolerance cm3/1000s.	: 8.0	+	ASSEMBLY GOVERNOR	SETT1	:NG
Nai minutitu.		†	Dotted amond num		762
Del. quantity cm3/1000 strokes Tolerance	: 23.0	Ŧ	Rated speed rpm rack travel mm	:	7.30
cm3/1000 strokes Check tolerance	: +- 2.0	Ī	Rated speed rpm Tolerance 1/min	: +	781 4
cm3/1000s. Spreed	: +- 4.5	‡	rack travel mm	:	4.00
Tolerance cm3/1000 strokes	: 5.5	+	rack travel mm Tolerance mm	: : +-	0.85 0.55
Check tolerance		+	Rated speed rpm	:	900
cm3/1000s.	: 9.0	‡	Rated speed rpm	:	763
(B) SETTING OF IN	IECTION DUMD	+	rack travel mm	:	7.30
WITH GOVERNOR	DECITOR FORF	Į	Rated speed rpm	:	782
		+	Tolerance 1/min	: +	4
		İ	rack travel mm	:	4.00
GUIDE SLEEVE POSI	TION	+	rack travel mm	:	0.85
Data dama adama	. 900	†	Tolerance mm		0.55
Rated speed rpm	: 800	Ī	Rated speed rpm	:	900
Rack travel in mm		+	Rated speed rpm	:	764
Tolerance mm	: <b>←</b> 0.35	<u> </u>	rack travel mm	:	7.30
governor spring		Ŧ	Rated speed rpm	:	783
pre-tension	: 3.50	+	Tolerance 1/min	: +-	4 00
click setting x	: 3.50	Į	rack travel mm	•	4.00
		+	rack travel mm	:	0.85
FULL LOAD DELIVERY	AT FULL LOAD STOP	1	Tolerance mm Rated speed rpm	: +-	0.55 900
Rated speed rpm	: 700	+		•	
Aneroid pressure	•	+	Rated speed rpm rack travel mm	:	765 7.30
hPa Del. quantity	•	I	rack travet mm	•	7.30
cm3/1000 strokes	: 92.5	+	Rated speed rpm	:	784
Tolerance cm3/1000 strokes	: + 1.0	1	Tolerance 1/min rack travel mm	: +-	4 4.00
Check tolerance		Ţ	I BUK LI GVEL IIIII	•	4.00
cm3/1000s.	: + 3.0	+	rack travel mm	:	0.85
Spreed Tolerance		1	Tolerance mm Rated speed rpm	•	0.55 900
cm3/1000 strokes	: 3.5	+	·	•	
Check tolerance	. 00	+	Rated speed rpm	:	766 7. 70
cm3/1000s.	: 8.0	1	rack travel mm	:	7.30
		+	Rated speed rpm	:	785
CONTROL LEVER		<b>†</b>	Tolerance 1/min rack travel mm	: +	4 4.00
CONTROL LEVER		Į	TOUR CLOVEL IIIII	•	4,00
		+	rack travel mm	:	0.85

Tolerance mm Rated speed rpm	: +-	0.55 900
Rated speed rpm rack travel mm	:	767 7.30
Rated speed rpm Tolerance 1/min rack travel mm	: +-	786 4 4.00
rack travel mm Tolerance mm Rated speed rpm	: : +-	0.85 0.55 900

### LOW IDLE

control lever position degree : 74.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450 rack travel mm : 4.10

## Testing:

Rated speed rpm : 450 rack travel mm : 4.60 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

## TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 8.35 Tolerance mm : + 0.05

Rated speed rpm : 550 rack travel mm : 8.40 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 10.00 Tolerance mm : + 0.30

### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : +- 1.00
Del. quantity
cm3/1000 strokes : 169.0
Tolerance
cm3/1000 strokes : +- 8.0
Check tolerance
cm3/1000s. : +- 11.0

#### LOW IDLE

Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes 2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 364EI

Injection pump

Pump designation : PES6A100D120RS2849

EP type number : 9 400 084 035

Governor

Governer design. : RSV450...900A1C2270R

Governer no. : 9 420 083 294

Cust. part No. : 3355524-VERSA048

Customer—spec. information Customer : CUMMINS Motor : 6 BT Power KW : 105.8

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 4.00

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.25
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 123.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

			,			
Spreed Tolerance cm3/1000 strokes	; 3.	.5	‡	control lever position degree tolerance degree	: +-	87.0 4.0
Check tolerance cm3/1000s.	: 8	.0	‡	ASSEMBLY GOVERNOR	SETTI	:NG
Del. quantity cm3/1000 strokes	: 23	.0	+	Rated speed rpm rack travel mm	:	755 9.20
Tolerance cm3/1000 strokes Check tolerance	: +- 2.	.0	Ī	Rated speed rpm Tolerance 1/min	: +-	786 4
cm3/1000s. Spreed	: +- 4.	.5	+	rack travel mm	:	4.00
Tolerance cm3/1000 strokes Check tolerance	: 5.	.5	‡	rack travel mm Tolerance mm Rated speed rpm	: +-	0.85 0.55 900
cm3/1000s.	: 9.	.0	+	Rated speed rpm	:	756
(B) SETTING OF IN	IECTION DI	IMD	1	rack travel mm	:	9.20
WITH GOVERNOR	JECTION PC	N. AL	+	Rated speed rpm Tolerance 1/min rack travel mm	: : +- :	787 4 4.00
GUIDE SLEEVE POSI	TION		‡	rack travel mm	•	0.85
Rated speed rpm	: 800		+	Tolerance mm Rated speed rpm	: +-	0.55 900
Rack travel in mm Tolerance mm	: 0.6 : + 0.3		Ŧ	Rated speed rpm rack travel mm	:	757 9.20
governor spring			Ŧ	Rated speed rpm		788
pre-tension click setting x	: 3.5	50	‡	Tolerance 1/min rack travel mm	: +-	4.00
FULL LOAD DELIVER	Y AT FULL	LOAD STOP	+	rack travel mm Tolerance mm	: +-	0.85
Rated speed rpm	: 700		Į	Rated speed rpm	:	900
Aneroid pressure hPa	: -		‡	Rated speed rpm rack travel mm	: :	758 9.20
Del. quantity cm3/1000 strokes Tolerance	: 123.	0	Ī	Rated speed rpm Tolerance 1/min	:	789 4
cm3/1000 strokes	: + 1.	0	Ŧ	rack travel mm	:	4.00
Check tolerance cm3/1000s. Spreed Tolerance	: +- 3.	0	+	rack travel mm Tolerance mm Rated speed rpm	: +-	0.85 0.55 900
cm3/1000 strokes	: 3.	5	+		•	
Check tolerance cm3/1000s.	: 8.	0	†	Rated speed rpm rack travel mm	:	759 9.20
			Ţ	Rated speed rpm	:	790
CONTROL LEVER	<del></del>	······································	+	Tolerance 1/min rack travel mm	: +- :	4 4.00
			Ţ	rack travel mm	:	0.85

: +~ 0.55 Tolerance mm 900 Rated speed rpm 760 Rated speed rpm : rack travel mm 9.20 791 Rated speed rpm : Tolerance 1/min : + 4.00 rack travel mm 0.85 rack travel mm : + 0.55Tolerance mm Rated speed rpm : 900

### LOW IDLE

control lever
position degree : 74.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 450 rack travel mm : 4.10

## Testing:

Rated speed rpm : 450 rack travel mm : 4.60 Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

### TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 10.25 Tolerance mm : + 0.05

Rated speed rpm : 550 rack travel mm : 10.30 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 11.20 Tolerance mm : + 0.30

### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 169.0
Tolerance
cm3/1000 strokes : + 8.0
Check tolerance
cm3/1000s. : + 11.0

## LOW IDLE

Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 365

Injection pump

Pump designation : PES6A90D410RS2823 EP type number : 0 410 896 093

Governor

Governer design. : RQV300...1350AB1278L

Governer no. : 9 420 080 359

Cust. part No. : 98455951

Customer-spec. information

Customer : FIAT ARGENTINA : 8.060.25.600 Motor

Power KW : 130.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. \*C : + 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

#### BASIC SETTING

Rated speed rpm : 1350

Rack travel in mm: 11.55 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 82.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

; <del>+-</del> 2.5 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

: 7.0 cm3/1000s.

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 2.0̈́ : +- 4.0 : 4.5	Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000 strokes : + 0.5 Check tolerance cm3/1000s. : + 2.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 7.0	
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	CONTROL LEVER	
		control lever position degree : 116.0	
GUIDE SLEEVE TRAV	EL ±	tolerance degree : +- 4.0	
Rated speed rpm guide sleeve	: 300	RATED SPEED	
travel mm	: 1.25	rack travel mm : 10.50	
Tolerance mm	: + 0.25	Rated speed rpm : 1395 Tolerance 1/min : +- 5	
Rated speed rpm	: 1015		
guide sleeve travel mm	: 6.05	rack travel mm : 4.00 Rated speed rpm : 1530	
Tolerance mm	+ 0.25	Tolerance 1/min : +- 15	
	+	0.50	
Rated speed rpm guide sleeve	: 460	rack travel mm : 0.50 Tolerance mm : +- 0.50	
travel mm	: 2.45	Rated speed rpm : 1650	
Tolerance mm	: + 0.25		
Rated speed rpm	: 640		
guide sleeve travel mm	: 3.45	LOW IDLE	
Tolerance mm	: +- 0.25		
Coted enough num	. 1700	control lever	
Rated speed rpm guide sleeve	: 1390 +	position degree : 71.0 tolerance degree : +- 4.0	
travel mm	: 8.45	-	
Tolerance mm	: +- 0.25	Testing:	
		Rated speed rpm : 300	
GUIDE SLEEVE POST	1100	rack travel mm : 7.60 Tolerance mm : +- 0.10	
Rated speed rpm	: 1480		
Rack travel in mm	: 12.20	Rated speed rpm : 200	
Tolerance mm		CRT mm min. :> 8.00	
		Rated speed rpm : 400	
FULL LOAD DELIVER	Y AT FULL LOAD STOP +		
Rated speed rpm Aneroid pressure	: 1350	TORQUE CONTROL	
hPa	: 800	Rated speed rpm : 1350 rack travel mm : 11.55	

Tolerance mm	: +- 0.05	+ Del. quantity + cm3/1000 strokes : 81.5
Rated speed rpm	: 500	+ Tolerance
rack travel mm Tolerance mm	: 12.55	+ cm3/1000 strokes : + 1.5
Tolerance mm	· +- 0.05	Check tolerance
TOTAL GITTE THE		+ cm3/1000s. : + 3.5
Rated speed rpm	• 200	I (1115) 100001
nack traval ma	12 10	Aneroid pressure
rack travel mm Tolerance mm	0.10	+ hPa : -
roterance min	. +- 0.10	Rated speed rpm : 500
Datasi anned man		
Rated speed rpm rack travel mm Tolerance mm	. 44.70	+ Del. quantity
rack travel mm	0.40	+ cm3/1000 strokes : 50.0
loterance mm	: +- 0.10	+ Tolerance
		- cm3/1000 strokes : + 0.5
ANERCID/ALTITUDE		+ cm3/1000s. : $+$ 2.5
COMPENSATOR TEST	•	+
		+ BREAKAWAY
SETTING		+
		+
Rated speed rpm Pressure hPa	: 500	+ Rack travel in mm : 10.50
Pressure hPa	: 800	Rated speed rpm : 1395
rack travel mm	: 12.55	+ Tolerance 1/min : + 5
Tolerance mm	; +- 0.05	1
. a car on the tinii		1
MEASUREMENT		
TEMOURE ENT		+ STARTING FUEL DELIVERY
Pressure hPa	• -	OTANIENO FOLL PELEVENT
Rated speed rpm	500	Rated speed rpm : 100
rated speed thu	. 10/0	T Rated Speed Phill : 100
rack travel mm	: 10.40	rack travel mm : 20.00
Tolerance mm	: +- 0.70	+ Tolerance mm : +- 1.00
	<b>26</b> -	+ Del. quantity
Rated speed rpm	: 500	- cm3/1000 strokes : 156.0
		+ Tolerance
Pressure hPa	: 520	+ cm3/1000 strokes : +- 8.0
rack travel mm	: 12.10	+ Check tolerance
Tolerance mm		+ cm3/1000s. : + 11.0
		+
Pressure hPa	: 400	+
rack travel mm	: 10.75	<del> </del>
Tolerance mm	: +- 0.05	
		+ LOW IDLE
START CUT-OUT		Del. quantity
		+ cm3/1000 strokes : 10.0
Rated speed rpm	: > 100	+ Tolerance
Rated speed rpm		+ cm3/1000 strokes : +- 2.0
nated speed (bill		Check tolerance
Check		+ cm3/1000s. : +- 4.0
speed 1/min	: > 80	+ Spreed
	. / 00	
Check		+ Tolerance
speed 1/min	: < 240	+ cm3/1000 strokes : 4.5
		+ Check tolerance
FUEL DELIVERY CHA	ARACTERISTICS	†
• .		†
Aneroid pressure	<b>*</b>	†
hPa	: 800	†
Rated speed rpm	: 800	

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 10.04.96 Edition Test oil : ISO 4113

Combination No. : 9 400 085 367

Injection pump

Pump designation : PES6A95D410RS2812 : 9 400 084 028 EP type number

Governor

Governer design. : RQV350...1250AB1280L

: 9 420 080 365 Governer no.

Cust. part No. : 9.0520.05.6.9505

Customer-spec. information Customer : MWM Motor : 6.10 T Power KW : 135.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. \*C Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar : +- 1.5 Tolerance bar

: 1 680 750 014 Test lines

Outside diameter : 6.0

x inside diameter: 2.0 x length am : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +-

Prestroke mm 2.80 : + 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel 10.50 : **←** 1.50 Tolerance mm Difference ° CS : 2.00

### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.05 Tolerance mm : ← 0.05

Del. quantity

cm3/1000 strokes : 96.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

	-	+
Spreed Tolerance cm3/1000 strokes	· 3.5	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance		Rated speed rpm : 1250 Aneroid pressure
cm3/1000s.	: 8.0	hPa : 900 Del. quantity cm3/1000 strokes : 96.5
Del. quantity cm3/1000 strokes Tolerance	: 16.0	Tolerance + cm3/1000 strokes : + 1.0
cm3/1000 strokes Check tolerance	: +- 2.0	Check tolerance cm3/1000s. : +- 3.0
cm3/1000s. Spreed	: +- 4.5	Spreed Tolerance
Tolerance cm3/1000 strokes	: 5.5	cm3/1000 strokes : 3.5 Check tolerance
Check tolerance cm3/1000s.	: 9.0	+ cm3/1000s. : 8.0
(B) SETTING OF IN	NJECTION PUMP	CONTROL LEVER
WITH GOVERNOR		control lever position degree : 55.0
GUIDE SLEEVE TRAN	/EL -	tolerance degree : +- 4.0
Rated speed rpm guide sleeve	: 1350	control lever position degree : 110.0
travel mm Tolerance mm	: 7.20 : +- 0.10	tolerance degree : +- 4.0
Rated speed rpm guide sleeve	: 800	RATED SPEED rack travel mm : 11.00
travel mm Tolerance mm	: 3.95 : +- 0.25	Rated speed rpm : 1318  Tolerance 1/min : +- 8
Rated speed rpm	: 300	rack travel mm : 4.00 Rated speed rpm : 1480
travel mm Tolerance mm	: 1.05 : +- 0.25	Tolerance 1/min : +- 15
Rated speed rpm guide sleeve	+	- rack travel mm : 0.50 - Tolerance mm : +- 0.50 - Rated speed rpm : 1650
travel mm Tolerance mm	: 2.75 : + 0.25	
Rated speed rpm guide sleeve	: 1500	LOW IDLE
travel mm Tolerance mm	: 8.55 : +- 0.25	control lever position degree : 69.0
GUIDE SLEEVE POSI	TION	tolerance degree : +- 4.0 - control lever
Rated speed rpm	: 1490	- control lever - position degree : 14.0 - tolerance degree : +- 4.0
Rack travel in mm Tolerance mm		- Testing:
	т	

Rated speed rpm rack travel mm Tolerance mm	: 350 : 6.10 : + 0.10	Check speed 1/min : < 290
Rated speed rpm	: 100	FUEL DELIVERY CHARACTERISTICS
CRT mm min.	: > 8.50	Aneroid pressure hPa : 900
Rated speed rpm	: 400	Rated speed rpm : 750 Del. quantity
TORQUE CONTROL		
Rated speed rpm rack travel mm Tolerance mm	: 12.05	cm3/1000 strokes : +- 2.0 Check tolerance - cm3/1000s. : +- 4.0
Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.45 : + 0.05	Aneroid pressure hPa : 900 Rated speed rpm : 1050 Del. quantity
Rated speed rpm rack travel mm Tolerance mm	: 12.25	+ cm3/1000 strokes : 99.5 + Tolerance + cm3/1000 strokes : +- 2.0 + Check tolerance + cm3/1000s. : +- 4.0
ANEROID/ALTITUDE COMPENSATOR TEST		Aneroid pressure hPa:
SETTING		+ Del. quantity + cm3/1000 strokes : 49.0 + Tolerance
Rated speed rpm Pressure hPa rack travel mm	: 900 : 12.45	cm3/1000 strokes : +- 1.0 + Check tolerance + cm3/1000s. : +- 3.0
Tolerance mm	: +- 0.05	- DDEALANA
MEASUREMENT		+ BREAKAWAY +
Pressure hPa Rated speed rpm		Rack travel in mm: 11.00 Rated speed rpm: 1318
Rated speed rpm	: 500	Tolerance 1/min : +- 8
Pressure hPa rack travel mm Tolerance mm	: 520 : 2.25 : + 0.15	STARTING FUEL DELIVERY
Pressure hPa rack travel mm Tolerance mm	: 260 : 0.80 : + 0.10	Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 155.0
START CUT-OUT		Tolerance + cm3/1000 strokes : +- 8.0
Rated speed rpm Rated speed rpm		Check tolerance cm3/1000s. : + 11.0
Check speed 1/min	: > 80	‡

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# LOW IDLE

Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000s. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 368

Injection pump

Pump designation : PES3A80D320RS1281 EP type number : 9 400 083 054

Governor

Governer design. : RSV350...900A7C627R

Governer no. : 9 420 083 264

Cust. part No. : 9.0520.05.3.8063

Customer-spec. information Customer : MWM Motor : D229.3 Power KW : 32.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

\_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.25
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50Tolerance mm : +- 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 4.50

### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 10.25
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 52.0

Tolerance cm3/1000 strokes : + 0.5

Check tolerance cm3/1000s.

<del>+-</del> 2.0

Spreed		+	
Tolerance cm3/1000 strokes :	: 2.5	CONTROL LEVER	
Check tolerance cm3/1000s.	: 4.0	control lever position degree tolerance degree	
Rated speed rpm :	: 350	1	,,,,
Rack travel in mm : Tolerance mm	: 7.40 : + 0.10	ASSEMBLY GOVERNO	R SETTING
Del. quantity	: 9.5	Rated speed rpm rack travel mm	: 940 : 9.20
	: + 1.5	Rated speed rpm Tolerance 1/min	: 969 : +- 4
	: +- 3.5	rack travel mm	4.00
Tolerance cm3/1000 strokes :	: 4.0	rack travel mm Tolerance mm	: 0.85 : + 0.55
Check tolerance cm3/1000s.	: 6.0	Rated speed rpm	: 1100
(B) SETTING OF INJE	ECTION DUMD	Rated speed rpm rack travel mm	
WITH GOVERNOR	ECITON POMP	Rated speed rpm Tolerance 1/min rack travel mm	: 970 : ← 4 : 4.00
GUIDE SLEEVE POSITI	ION	rack travel mm Tolerance mm	: 0.85 : +- 0.55
Rated speed rpm :	800	Rated speed rpm	1100
Rack travel in mm : Tolerance mm :	0.65 + 0.35	Rated speed rpm rack travel mm	
<pre>governor spring pre-tension click setting x :</pre>	6.00	Rated speed rpm Tolerance 1/min rack travel mm	
FULL LOAD DELIVERY	AT FULL LOAD STOP	rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1100
Rated speed rpm : Aneroid pressure hPa :	900	Rated speed rpm	: 943 : 9.20
Del. quantity cm3/1000 strokes :	52.0	Rated speed rpm	: 972
Tolerance cm3/1000 strokes :	+- 0.5	Tolerance 1/min rack travel mm	: +- 4 : 4.00
Check tolerance cm3/1000s. : Spreed Tolerance	<del></del> 2.0	rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1100
cm3/1000 strokes : Check tolerance	2.5	Rated speed rpm	: 944
cm3/1000s. :	4.0	rack travel mm	: 9.20
		Rated speed rpm Tolerance 1/min	: 973 : +- 4

rack travel mm : 4.00 rack travel mm 0.85 : : +- 0.55 Tolerance mm Rated speed rpm 1100 Rated speed rpm 945 rack travel mm 9.20 974 Rated speed rpm Tolerance 1/min rack travel mm 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1100

### LOW IDLE

control lever position degree : 79.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350 rack travel mm : 5.50

### Testing:

Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 450
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

## TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 10.25 Tolerance mm : + 0.05

Rated speed rpm : 500 rack travel mm : 10.30 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 11.20 Tolerance mm : + 0.30

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : +- 1.00

### LOW IDLE

Rated speed rpm	:		350
rack travel mm	:		7.40
Tolerance mm	:	+	0.10
Del. quantity			
cm3/1000 strokes	:		9.5
Tolerance			
cm3/1000 strokes	:	+-	1.5
Check tolerance			
cm3/1000s.	;	+-	3.5
Spreed			
Tolerance			
cm3/1000 strokes	:		4.0
Check tolerance			
cm3/1000s.	:		6.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 : ISO 4113 Test oil

Combination No. : 9 400 085 369

Injection pump

Pump designation : PES4A80D320RS1282 EP type number : 9 400 083 056

Governor

Governer design. : RSV350...900A7C627R

: 9 420 083 264 Governer no.

: 90520.05.4.8065 Cust. part No.

Customer-spec. information Customer : MWM : D.229-4 Motor Power KW 34.3

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

173.5 bar : + 1.5 Tolerance bar

: 1 680 750 003 Test lines

Outside diameter : 6.0 x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar 1.0

Prestroke mm 2.25 Tolerance mm : + 0.05Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : **←** 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Beginning of delivery differende

and maximum rack

travel 10.50 : +- 1.50 Tolerance mm Difference ° CS 4,50

## BASIC SETTING

900 Rated speed rpm

10.25 Rack travel in mm : Tolerance mm 0.05

Del. quantity cm3/1000 strokes 52.0

Tolerance cm3/1000 strokes : +-

Check tolerance 2.0 : +-

0.5

cm3/1000s.

Spreed	+
Tolerance cm3/1000 strokes : 2.5	CONTROL LEVER
Check tolerance cm3/1000s. : 4.0	control lever position degree : 111.0
Rated speed rpm : 350	tolerance degree : +- 4.0
Rack travel in mm: 7.40 Tolerance mm: +- 0.10	ASSEMBLY GOVERNOR SETTING
Del. quantity cm3/1000 strokes : 9.5	Rated speed rpm : 940 rack travel mm : 9.20
Tolerance cm3/1000 strokes : +- 1.5 Check tolerance	Rated speed rpm : 969 Tolerance 1/min : + 4
cm3/1000s. : +- 3.5 Spreed	rack travel mm : 4.00
Tolerance cm3/1000 strokes : 4.0	+ rack travel mm : 0.85 + Tolerance mm : + 0.55
Check tolerance cm3/1000s. : 6.0	Rated speed rpm : 1100 Rated speed rpm : 941
(B) SETTING OF INJECTION PUMP	rack travel mm : 9.20
WITH GOVERNOR	Rated speed rpm : 970 Tolerance 1/min : +- 4 rack travel mm : 4.00
GUIDE SLEEVE POSITION	rack travel mm : 0.85 Tolerance mm : + 0.55
Rated speed rpm : 800	Rated speed rpm : 1100
Rack travel in mm: 0.65 Tolerance mm: +- 0.35	Rated speed rpm : 942 rack travel mm : 9.20
governor spring pre-tension	Rated speed rpm : 971 Tolerance 1/min : +- 4
click setting x : 6.00	+ rack travel mm : 4.00
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1100
Rated speed rpm : 900 Aneroid pressure	Rated speed rpm : 943
hPa : - Del. quantity	rack travel mm : 9.20
cm3/1000 strokes : 52.0 Tolerance cm3/1000 strokes : +- 0.5	+ Rated speed rpm : 972 + Tolerance 1/min : + 4 + rack travel mm : 4.00
cm3/1000 strokes : +- 0.5 Check tolerance cm3/1000s. : +- 2.0	rack travel mm : 0.85
Spreed Tolerance	Tolerance mm : + 0.55 Rated speed rpm : 1100
cm3/1000 strokes : 2.5 Check tolerance	Rated speed rpm : 944
cm3/1000s. : 4.0	rack travel mm : 9.20
	Rated speed rpm : 973 Tolerance 1/min : +- 4

rack travel mm : 4.00 0.85 rack travel mm : + 0.55Tolerance mm Rated speed rpm : 1100 945 Rated speed rpm : rack travel mm 9.20 974 Rated speed rpm : Tolerance 1/min 4.00 rack travel mm 0.85 rack travel mm : +~ 0.55 Tolerance mm Rated speed rpm : 1100

### LOW IDLE

control lever position degree : 79.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 350 rack travel mm : 5.50

### Testing:

Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 450
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

### TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 10.25 Tolerance mm : + 0.05

Rated speed rpm : 500 rack travel mm : 10.30 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 11.20 Tolerance mm : +- 0.30

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00

### LOW IDLE

Rated speed rpm	:	350
rack travel mm	:	7.40
Tolerance mm	: +	-0.10
Del. quantity		
cm3/1000 strokes	:	9.5
Tolerance		
cm3/1000 strokes	; +	- 1.5
Check tolerance		
cm3/1000s.	: +	- 3.5
Spreed		
Tolerance		
cm3/1000 strokes	:	4.0
Check tolerance		
cm3/1000s.	:	6.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 370

Injection pump

Pump designation : PES6A80D320RS1271 EP type number : 9 400 083 058

Governor

Governer design. : RSV350...900A7C627R

Governer no. : 9 420 083 264

Cust. part No. : 9.0520.05.6.8063

Customer-spec. information Customer : MWM Motor : D229-6 Power KW : 61.9

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.25
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 10.25 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 52.0

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance cm3/1000s. : + 2.0	
Spreed Tolerance	CONTROL LEVER
cm3/1000 strokes : 2.5	control lever position degree : 111.0
Check tolerance cm3/1000s. : 4.0	tolerance degree : +- 4.0
Rated speed rpm : 350	ASSEMBLY GOVERNOR SETTING
Rack travel in mm: 7.40 Tolerance mm: + 0.10 Del. quantity	Rated speed rpm : 940 rack travel mm : 9.20
cm3/1000 strokes : 9.5 Tolerance + cm3/1000 strokes : + 1.5	Rated speed rpm : 969 Tolerance 1/min : + 4 rack travel mm : 4.00
Check tolerance cm3/1000s. : + 3.5	rack travel mm : 0.85
Spreed + Tolerance + cm3/1000 strokes : 4.0	Tolerance mm : ← 0.55 Rated speed rpm : 1100
Check tolerance cm3/1000s. : 6.0	Rated speed rpm : 941 rack travel mm : 9.20
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 970 Tolerance 1/min : +- 4 rack travel mm : 4.00
	rack travel mm : 0.85 Tolerance mm : +- 0.55
GUIDE SLEEVE POSITION	Rated speed rpm : 1100
Rated speed rpm : 800	Rated speed rpm : 942 rack travel mm : 9.20
Rack travel in mm: 0.65 Tolerance mm: + 0.35	Rated speed rpm : 971 Tolerance 1/min : +- 4
governor spring pre-tension +	rack travel mm : 4.00
click setting x : 6.00	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1100
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 943
Rated speed rpm : 900 Aneroid pressure	rack travel mm : 9.20 Rated speed rpm : 972
hPa : - + Del. quantity cm3/1000 strokes : 52.0 +	Tolerance 1/min : + 4 rack travel mm : 4.00
Tolerance cm3/1000 strokes : +- 0.5	rack travel mm : 0.85
Check tolerance cm3/1000s. : +- 2.0	Tolerance mm : + 0.55 Rated speed rpm : 1100
Spreed Tolerance cm3/1000 strokes : 2.5	Rated speed rpm : 944 rack travel mm : 9.20
Check tolerance tm3/1000s. : 4.0 +	Rated speed rpm : 973

Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1100
Rated speed rpm	: 945
rack travel mm	: 9.20
Rated speed rpm	: 974
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1100
	<del></del>

#### LOW IDLE

control lever
position degree : 79.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350 rack travel mm : 5.50

## Testing:

Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 450
Tolerance 1/min : +- 30

Rated speed rpm : 100

CRT mm min. : > 19.00

# TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 10.25 Tolerance mm : + 0.05

Rated speed rpm : 500 rack travel mm : 10.30 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 11.20 Tolerance mm : +- 0.30

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : +- 1.00

#### LOW IDLE

Rated speed rpm : 350 7.40 rack travel mm Tolerance mm : + 0.10Del. quantity cm3/1000 strokes : 9.5 Tolerance cm3/1000 strokes : +-1.5 Check tolerance cm3/1000s. 3.5 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 6.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 372

Injection pump

Pump designation : PES6A95D410RS2772 EP type number : 9 400 084 018

Governor

Governer design. : RQV300...1300AB1283L

Governer no. : 9 420 080 367

Cust. part No. :

Customer-spec. information

Customer : MBB

: OM 366 LA Motor : 155.0

Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

3.25 Prestroke mm : +- 0.05 Tolerance mm

Check

: + - 0.10tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

: -300

#### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 11.65

Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 106.0

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. 8.0

4	Spreed
Del. quantity	Tolerance
cm3/1000 strokes : 11.0	cm3/1000 strokes : 3.5
Tolerance	Check tolerance
cm3/1000 strokes : + 2.0	cm3/1000s. : 8.0
Check tolerance	
cm3/1000s. : +- 4.5 +-	
Tolerance	CONTROL LEVER
cm3/1000 strokes : 5.5	CONTROL LEVER
Check tolerance	control lever
cm3/1000s. : 9.0	position degree : 60.0
+	tolerance degree : + 4.0
+	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 109.0
WITH GOVERNOR I	position degree : 109.0 tolerance degree : ÷- 4.0
	toterance degree . +- 4.0
GUIDE SLEEVE TRAVEL	RATED SPEED
+	
Rated speed rpm : 300 +	rack travel mm : 10.60
guide sleeve	Rated speed rpm : 1360
travel mm : 1.05 +	Tolerance 1/min : +- 5
Toterance man : T 0.25	rack travel mm : 4.00
Rated speed rpm : 1500	Rated speed rpm : 1505
guide sleeve	Tolerance 1/min : + 15
travel mm : 8.55	
Tolerance mm : +- 0.05 +	rack travel mm : 0.50
Date department of 500	Tolerance mm : +- 0.50
Rated speed rpm : 500 +	Rated speed rpm : 1650
travel mm : 2.55	
Tolerance mm : + 0.25	
+	LOW IDLE
Rated speed rpm : 750 +	
guide sleeve +	
travel mm : 4.20	control lever
Tolerance mm : +- 0.10 +	position degree : 68.0 tolerance degree : +- 4.0
	toter after degree . +- 4.0
GUIDE SLEEVE POSITION	control lever
+	position degree : 19.0
Rated speed rpm : 1500 +	tolerance degree : +- 4.0
Onel through in mm . 14.50	Testing:
Rack travel in mm: 16.50 + Tolerance mm: + 1.30 +	resting:
Total alice likil	Rated speed rpm : 300
	rack travel mm : 7.00
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.10
+	200
Rated speed rpm : 1300 +	Rated speed rpm : 100
Aneroid pressure + 900 +	CRT mm min. :> 8.00
Del. quantity	CONT. THE OFFICE
cm3/1000 strokes : 106.0	Rated speed rpm : 375
Tolerance +	·
cm3/1000 strokes : +- 0.5	
Check tolerance	TORQUE CONTROL
cm3/1000s. : +- 2.5 +	

Rated speed rpm : 1300	+ Aneroid pressure
rack travel mm · 11 65	hPa : -
rack travel mm : 11.65 Tolerance mm : +- 0.05	Rated speed rpm : 500
TOTAL MINING THE STATE OF THE S	Del. quantity
Rated speed rpm : 800	- cm3/1000 strokes : 61.0
Rated speed rpm : 800 rack travel mm : 11.65	Tolerance
Tolerance mm : +- 0.05	- cm3/1000 strokes : + 1.0
	Check tolerance
	$+ \frac{\text{cm3/1000s.}}{\text{cm3/1000s.}} : + 3.0$
ANEROID/ALTITUDE	
COMPENSATOR TEST	
	+ BREAKAWAY
	+
SETTING	1
	Rack travel in mm: 10.60
Rated speed rpm : 500	+ Rated speed rpm : 1360
Pressure hPa : 900	Tolerance 1/min : +- 5
rack travel mm : 11.65	+
Tolerance mm : + 0.05	+
•	
MEASUREMENT	+ STARTING FUEL DELIVERY
	†
Pressure hPa : -	Rated speed rpm : 100
Rated speed rpm : 500	rack travel mm : 12.90
505	Tolerance mm : + 0.10
Rated speed rpm : 500	Del. quantity
7/0	cm3/1000 strokes : 76.5
Pressure hPa : 340	Tolerance
rack travel mm : 0.40	cm3/1000 strokes : + 7.5
Tolerance mm : +- 0.10	Check tolerance
Dunganua kiba . F/O	cm3/1000s. : +- 10.0
Pressure hPa : 560	T
rack travel mm : 1.35 - Tolerance mm : +- 0.05 -	Ť
Toterance mm : +- 0.05	
	LOW IDLE
START CUT-OUT	EOW IVEL
START COT OUT	Del. quantity
Rated speed rpm : > 100	cm3/1000 strokes : 11.0
Rated speed rpm : < 220 -	Tolerance
	cm3/1000 strokes : + 2.0
Check -	Check tolerance
speed 1/min : > 80 -	cm3/1000s. : +- 4.5
Check -	Spreed
speed 1/min : < 240 -	† Tolerance
•	cm3/1000 strokes : 5.5
	Check tolerance
FUEL DELIVERY CHARACTERISTICS -	cm3/1000s. : 9.0
	+
Aneroid pressure	•
hPa : 900	+
Rated speed rpm : 800	†
Del. quantity	
cm3/1000 strokes : 95.5	
Tolerance	End of test specification sheet
cm3/1000 strokes : +- 2.0	†
Check tolerance	<del>-</del>
cm3/1000s. : +- 4.0 -	<u>†</u>
	<b>-</b>

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 373

Injection pump

Pump designation : PES6A95D410RS2795

EP type number : 9 400 084 020

Governor

Governer design. : RSV350...1250A0C1169

L

Governer no. : 9 420 083 296

Cust. part No. :

Customer-spec. information Customer : MBB Motor : OM 366 Power KW : 94.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 8.65 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 63.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

Spreed

: <del>+ 3.0</del>

Tolerance

7 /4 COC

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 8.0

Del. quantity	
cm3/1000 strokes Tolerance	: 12.0
cm3/1000 strokes Check tolerance	: <del>+</del> 2.0
cm3/1000s.	; <del></del>
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 5.5
cm3/1000s.	: 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
GUIDE SLEEVE POSI	TION
Rated speed rpm	: 800
Rack travel in mm Tolerance mm	: 0.65 : + 0.35
governor spring pre-tension click setting x	: 5.00
FULL LOAD DELIVERY	Y AT FULL LOAD STOP
Rated speed rpm	Y AT FULL LOAD STOP : 1250
Rated speed rpm Aneroid pressure	: 1250 : -
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: 1250 : - : 63.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1250 : - : 63.5 : + 1.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 1250 : - : 63.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 1250 : - : 63.5 : ← 1.0 : ← 3.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 1250 : - : 63.5 : ← 1.0 : ← 3.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1250 : - : 63.5 : + 1.0 : + 3.0 : 3.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1250 : - : 63.5 : + 1.0 : + 3.0 : 3.5
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1250 : - : 63.5 : + 1.0 : + 3.0 : 3.5 : 8.0
Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1250 : - : 63.5 : + 1.0 : + 3.0 : 3.5 : 8.0

: +- 5
: 4.00 : 1347 : +- 15
: 0.85 : +- 0.55 : 1500
: 82.0 : +- 4.0
out bumper spring
: 350 : 6.50
: 350 : 7.00 : + 0.10
: 2.00 : 475 : +- 30
: 100
: > 19.00
: 1250 : 8.65 : +- 0.05
: 500 : 8.70 : +- 0.10
: 400 : 10.10 : ← 0.30

Rack travel in mm: 7.60
Rated speed rpm: 1295
Tolerance 1/min: +- 5

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 14.20 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 101.5 Tolerance cm3/1000 strokes : + 7.5 Check tolerance cm3/1000s. : + 10.0

### LOW IDLE

Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000s. : + 4.5
Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 10.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 085 374

Injection pump

Pump designation : PES6A95D410RS2772 EP type number : 9 400 084 018

Governor

Governer design. : RSV350...1250A0c1170

: 9 420 083 297 Governer no.

Cust. part No. :

Customer-spec. information Customer : MBB Motor : OM 366 A Power KW : 121.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

173.5 : + 1.5 Tolerance bar

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + 0.05 Check tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

## BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 9.65 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 82.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance : +-cm3/1000s. 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 8.0

Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : 9.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	
GUIDE SLEEVE POSITION	
Rated speed rpm : 800	
Rack travel in mm : 0.65 Tolerance mm : + 0.35	
governor spring pre-tension click setting x : 3.25	
FULL LOAD DELIVERY AT FULL LOAD STOP	
FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm : 1250 Aneroid pressure	
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity	
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 82.0 Tolerance	
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance	
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance	
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000s trokes : + 1.0 Check tolerance cm3/1000s : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s : 8.0	
Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000 strokes : 8.0  CONTROL LEVER  control lever position degree : 103.0	

Tolerance 1/min	<b>:</b> + 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1340 : + 15
rack travel mm Tolerance mm Rated speed rpm	: +- 0.70
LOW IDLE	
control lever position degree tolerance degree	: 75.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm rack travel mm	
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 6.80 : +- 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 450 : + 30
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1250 : 9.65 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 800 : 9.65 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 9.70 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 400 : 11.10 : ← 0.30

# FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 800 Rated speed rpm Del. quantity cm3/1000 strokes : 74.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. 4.0 **BREAKAWAY** Rack travel in mm : 8,60 Rated speed rpm : 1295 Tolerance 1/min : +-STARTING FUEL DELIVERY Rated speed rpm 100 14.00 rack travel mm : + 0.10Tolerance mm Del. quantity cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : + 13.0 LOW IDLE Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 5.0 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance 9.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 375

Injection pump

Pump designation : PES6A95D41ORS2812

EP type number : 9 400 084 028

Governor

Governer design. : RSV350...1250A8C808L

Governer no. : 9 420 083 298

Cust. part No. : 9.0520.05.6.9506

Customer-spec. information

Customer : MWM

Motor

: 6.10 TCA

Power KW

: 158.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : +- 1.0

Prestroke mm : 2.80
Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

: 10.50 travel

travel: 10.50
Tolerance mm: +- 1.50
Difference °CS: 2.00

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 13.35

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 119.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.

: +- 3.0

	+
Spreed	+ control lever
Tolerance	position degree : 107.0
cm3/1000 strokes : 3.5	+ tolerance degree : +- 4.0
	1
Check tolerance	A RATED SPEED
cm3/1000s, : 8.0	The state of the s
(1000)	+ rack travel mm : 12.30
Del. quantity	+ Rated speed rpm : 1305
cm3/1000 strokes : 20.5	Tolerance 1/min : +- 5
Tolerance	T roter drice minima.
cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1360
cm3/1000s. : +- 4.5	Tolerance 1/min : +- 15
	T Total ance Trimin . The 13
Spreed	Track travel mm : 0.85
Tolerance cm3/1000 strokes : 5.5	t and the state of
Check tolerance	+ Rated speed rpm : 1500
cm3/1000s. : 9.0	Ţ
	†
(D) APPETAIN AP TAILEDTTAL BUILD	LOUITNE
(B) SETTING OF INJECTION PUMP	+ LOW IDLE
WITH GOVERNOR	<b>†</b>
	† amend to a
	+ control lever
	+ position degree : 65.0
GUIDE SLEEVE POSITION	tolerance degree : + 4.0
	† • • • • • • • • • • • • • • • • • • •
Rated speed rpm : 800	Setting point w/out bumper spring
	† <del></del> _
Rack travel in mm: 0.65	+ Rated speed rpm : 350
Tolerance mm : $\leftarrow$ 0.35	rack travel mm : 6.00
	†
governor spring	† Testing:
pre-tension	†
click setting x : 4.00	+ Rated speed rpm : 350
	+ rack travel mm : 6.50
	+ Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	+
	+ rack travel mm : 2.00
Rated speed rpm : 1250	+ Rāted speed rpm : 435
Aneroid pressure	+ Tolerance 1/min : +- 30
hPa : -	+
Del. quantity	+ Rated speed rpm : 100
cm3/1000 strokes : 119.5	+
Tolerance	+ CRT mm min. : > 19.00
cm3/1000 strokes : +- 1.0	+
Check tolerance	
cm3/1000s. : +- 3.0	TORQUE CONTROL
Spreed	+
Tolerance	Rated speed rpm : 1250
cm3/1000 strokes : 3.5	+ rack travel mm : 13.35
Check tolerance	+ Tolerance mm : +- 0.05
cm3/1000s. : 8.0	100000000000000000000000000000000000000
UIID/ 10003 0.0	Rated speed rpm : 600
	+ rack travel mm : 13.35
	+ Tolerance mm : +- 0.05
CONTROL 1 EVED	T Total ance time 1. The 0.05
CONTROL LEVER	+ Rated speed rpm : 400
	+ rack travel mm : 14.80

Tolerance mm : +- 0.30 BREAKAWAY Rack travel in mm : 12.30 Rated speed rpm : 1305 Tolerance 1/min : +- 5 STARTING FUEL DELIVERY Rated speed rpm : 100 20.00 rack travel mm : Tolerance mm : +- 1.00 Del. quantity cm3/1000 strokes : 156.0 Tolerance cm3/1000 strokes : +- 8.0 Check tolerance cm3/1000s. : +- 11.0 LOW IDLE Del. quantity cm3/1000 strokes : 20.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. 9.0 End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 10.04.96 : ISO 4113 Test oil Combination No. : 9 400 085 376 Injection pump Pump designation : PES4A95D32ORS2807 EP type number : 0 410 894 994 Governor Governer design. : RSV375...1150A2C2282 : 9 420 083 302 Governer no. Cust. part No. Customer-spec. information Customer : VALMET Motor : 420 DS Power KW : 77.2 TEST BENCH REQUIREMENTS Inlet line : 3.1 Test oil inlet temp. °C Tolerance °C : 1 419 992 198 Overflow valve 1.5 Inlet press. bar : Test nozzle holde : 0 681 343 009 assembly Opening pressure 173.5 bar : +- 1.5 Tolerance bar

: 1 680 750 014

6.0

x inside diameter x length mm	: 2.0 : 600
REMARKS	
(A) INJECTION PUMP Set equal delivery per values	quant.
BEGINNING OF DELIV	/ERY
Test pressure bar Tolerance bar	: 26.0 : + 1.0
Prestroke mm Tolerance mm Check tolerance mm	: 2.40 : + 0.05 : + 0.10
Rack travel in mm Tolerance mm	: 10.50 : + 1.50
Firing order	: 1-2-4-3
Phasing	: 0-90-180-270
Beginning of deliv	ery differende
and maximum rack travel Tolerance mm Difference °CS	: 10.50 : +- 1.50 : 5.00
BASIC SETTING	
Rated speed rpm	: 1150
Rack travel in mm Tolerance mm	: 12.25 : +- 0.05
Del. quantity cm3/1000 strokes	: 101.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: +- 3.0
Spreed	

Test lines

Outside diameter :

Tolerance	+
cm3/1000 strokes : 3.5	+ control lever
	position degree : 101.0
Charle to Language	
Check tolerance	tolerance degree : +- 4.0
cm3/1000s. : 8.0	†
	+ RATED SPEED
Del. quantity	+
cm3/1000 strokes : 20.0	+ rack travel mm : 11.20
Tolerance	+ Rated speed rpm : 1195
cm3/1000 strokes : +- 2.0	+ Tolerance 1/min : +- 5
Check tolerance	†
cm3/1000s. : +- 4.5	+ rack travel mm : 4.00
Spreed	+ Rated speed rpm : 1290
Tolerance	+ Tolerance 1/min : +- 15
cm3/1000 strokes : 5.5	
	rack travel mm : 0.85
Check tolerance	
cm3/1000s. : 9.0	+ Tolerance mm : +- 0.55
	+ Rated speed rpm : 1400
	+
(B) SETTING OF INJECTION PUMP	1
WITH GOVERNOR	
MILL GOATUACK	LOW IDLE
	+ LOW TOLE
	†
	+
GUIDE SLEEVE POSITION	+ control lever
	+ position degree : 75.0
Rated speed rpm : 800	+ tolerance degree : +- 4.0
hated speed (pill . ODO	Total and degree 4.0
- 1 · 1 · 1 ·	<b>T</b>
Rack travel in mm : 0.65	+ control lever
Tolerance mm : + 0.35	+ position degree : 25.0
	+ tolerance degree : + 4.0
governor spring	1
pre-tension	+ Setting point w/out bumper spring
	T secting points wrote bumper spring
click setting x : 5.00	<b>—</b>
	+ Rated speed rpm : 375
	+ rack travel mm : 5.10
FULL LOAD DELIVERY AT FULL LOAD STOP	+
	+ Testing:
Rated speed rpm : 1150	1
	Dated award nam a 775
Aneroid pressure	+ Rated speed rpm : 375
hPa : -	+ rack travel mm : 5.60
Del. quantity	+ Tolerance mm : + 0.10
cm3/1000 strokes : 101.0	+
Tolerance	+ rack travel mm : 2.00
cm3/1000 strokes : +- 1.0	+ Rated speed rpm : 495
Check tolerance	+ Tolerance 1/min : + 30
cm3/1000s. : + 3.0	†
Spreed	+ Rated speed rpm : 100
Tolerance	+
cm3/1000 strokes : 3.5	+ CRT mm min. : > 19.50
Check tolerance	1
cm3/1000s. : 8.0	TOROUG CONTROL
	+ TORQUE CONTROL
	+
	+ Rated speed rpm : 1150
CONTROL LEVER	+ rack travel mm : 12.25
VVITING to be the their	+ Tolerance mm : + 0.05
acutual lavan	Total alice imi
control lever	T
position degree : 51.0	+ Rated speed rpm : 500_
tolerance degree : +- 4.0	+ rack travel mm : 12.75
<del>-</del>	•

Tolerance mm : + 0.05
Rated speed rpm : 700

rack travel mm : 12.75
Tolerance mm : + 0.05

Rated speed rpm : 950 rack travel mm : 12.45 Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 700
Del. quantity

cm3/1000 strokes : 101.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

BREAKAWAY

Rack travel in mm: 11.20
Rated speed rpm: 1195
Tolerance 1/min: +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00

Del. quantity

cm3/1000 strokes : 202.0

Tolerance

cm3/1000 strokes : + 8.0

Check tolerance

cm3/1000s. : +- 11.0

LOW IDLE

Del. quantity

cm3/1000 strokes : 20.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : + 4.5

Spreed

K04

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 10.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 085 378

Injection pump

Pump designation : PES6A100D320/3RS2827

EP type number : 9 400 084 030

Governor

Governer design. : RSV400...900A7C2209

: -4R

: 9 420 083 301 Governer no.

Cust. part No. : 3355291

Customer-spec. information Customer : CUMMINS : 6 CTA 240 Motor : 180.0 Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 2.65 : +- 0.05Tolerance mm Check

: + - 0.10tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

10,50 travel Tolerance mm : +- 1.50 Difference \* CS : 4.00

## BASIC SETTING

Rated speed rpm : 880

Rack travel in mm: 13.25 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 159.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. 3.0

		,			
Spreed	**************************************	• ‡	control lever		
Tolerance		+	position degree	:	107.0
cm3/1000 strokes	: 3.5	+	tolerance degree		
m1 1 . i		. †			
Check tolerance		†	LOOPING V. COVERNOR	A = = = =	<b>TN</b> 10
cm3/1000s.	: 8.0	†	ASSEMBLY GOVERNOR	SETT.	TMR
Del. quantity		I	Rated speed rpm	•	923
cm3/1000 strokes	: 11.0	1	rack travel mm		12.20
Tolerance		+			
cm3/1000 strokes	: +- 2.0	+	Rated speed rpm	:	963
Check tolerance		+	Tolerance 1/min	: +-	4
cm3/1000s.	: <del>+</del>	†	rack travel mm	:	4.00
Spreed Tolerance		†	rack travel mm		0.85
cm3/1000 strokes	: 5.5	I	Tolerance mm	: +-	0.55
Check tolerance	. 3.3	1	Rated speed rpm		1100
cm3/1000s.	: 9.0	1	maroa opood . p.m	•	.,
		+	Rated speed rpm	:	924
		+	rack travel mm	:	12.20
(B) SETTING OF IN	JECTION PUMP	†	Data di secondo s	_	044
WITH GOVERNOR		†	Rated speed rpm Tolerance 1/min		964 4
		I	rack travel mm	. —	4.00
		I	TACK CHAVEC MAN	•	4.00
GUIDE SLEEVE POSI	TION	+	rack travel mm	:	0.85
		+	Tolerance mm	: +-	0.55
Rated speed rpm	: 800	+	Rated speed rpm	:	1100
Dard, Americal dia am	. 0.45	†	Detail sused num	_	025
Rack travel in mm Tolerance mm		Ť	Rated speed rpm rack travel mm	:	925 12.20
locerance mm	. +- 0.33	I	TACK CLAVEC HAII	•	12.20
governor spring		1	Rated speed rpm	:	965
pre-tension		+	Tolerance 1/min	: +-	4
click setting x	: 5.30	+	rack travel mm	:	4.00
		+			0.05
EUL LOAD DELTVED	Y AT FULL LOAD STOP	1	rack travel mm Tolerance mm	: +-	0.85
LOFF FOND DEFINER	F AT FULL LOAD STOP	I	Rated speed rpm	:	1100
Rated speed rpm	: 880	I	nated speed ipin	•	1100
Aneroid pressure	. 555	1	Rated speed rpm	:	926
hPa	: -	+	rack travel mm	:	12.20
Del. quantity		+			
cm3/1000 strokes	: 159.5	+	Rated speed rpm	:	966
Tolerance		†	Tolerance 1/min	: +-	4 00
cm3/1000 strokes Check tolerance	: +- 1.0	Ī	rack travel mm	•	4.00
cm3/1000s.	: +- 3.0	I	rack travel mm	•	0.85
Spreed		1	Tolerance mm	: +-	0.55
Tolerance			Rated speed rpm	:	1100
cm3/1000 strokes	: 3.5	+			
Check tolerance	0.0		Rated speed rpm	:	927
cm3/1000s.	: 8.0	†	rack travel mm	:	12.20
		I	Rated speed rpm	•	967
			Tolerance 1/min	: +-	4
CONTROL LEVER			rack travel mm	:	4.00
		+			
		+	rack travel mm	:	0.85

Tolerance mm	: + 0.55
Rated speed rpm	: 1100
Rated speed rpm	: 928
rack travel mm	: 12.20
Rated speed rpm	: 968
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1100

## LOW IDLE

control lever
position degree : 77.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400 rack travel mm : 3.50

## Testing:

Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 435
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

## TORQUE CONTROL

Rated speed rpm : 880 rack travel mm : 13.25 Tolerance mm : + 0.05

Rated speed rpm : 500 rack travel mm : 13.30 Tolerance mm : + 0.10

Rated speed rpm : 350 rack travel mm : 14.40 Tolerance mm : + 0.30

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 166.0
Tolerance
cm3/1000 strokes : + 8.0
Check tolerance
cm3/1000s. : + 11.0

### LOW IDLE

Del. quantity cm3/1000 strokes : 11.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance 5.5 cm3/1000 strokes : Check tolerance 9.0 cm3/1000s.

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 378EE

Injection pump

Pump designation : PES6A100D320/3RS2827

EP type number : 9 400 084 030

Governor

Governer design. : RSV400...900A7C2209

: -4R

Governer no. : 9 420 083 301

Cust. part No. : 3355523-VERSA0-44

Customer-spec. information Customer : CUMMINS Motor : 6 CTA 240 Power KW : 155.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.65
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 4.00

## BASIC SETTING

Rated speed rpm : 720

Rack travel in mm : 13.25 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 165.0

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

	.1		
Spreed	I	control lever	
Tolerance cm3/1000 strokes : 3.5	‡	position degree tolerance degree	
Check tolerance	<del></del>		
cm3/1000s. : 8.0	1	ASSEMBLY GOVERNOR	SETTING
Del. quantity	+	Rated speed rpm	: 756
cm3/1000 strokes : 11.0 Tolerance	1	rack travel mm	: 12.20
cm3/1000 strokes : +- 2.0	+	Rated speed rpm	: 803
Check tolerance cm3/1000s. : +- 4.5	1	Tolerance 1/min rack travel mm	: +- 4
Spreed	+		
Tolerance cm3/1000 strokes : 5.5	1	rack travel mm Tolerance mm	: 0.85 : +- 0.55
Check tolerance	+	Rated speed rpm	900
cm3/1000s. : 9.0	1	Rated speed rpm	: 757
	Ŧ	rack travel mm	12.20
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	1	Rated speed rpm	: 804
WITH GOVERNOR	Į	Tolerance 1/min	: +- 4
	†	rack travel mm	: 4.00
GUIDE SLEEVE POSITION	Ţ	rack travel mm	: 0.85
Rated speed rpm : 800	<u>†</u>	Tolerance mm Rated speed rpm	: ← 0.55 : 900
The second secon	Ţ	nated speed i pili	
Rack travel in mm : 0.65 Tolerance mm : + 0.35	<u>†</u>	Rated speed rpm rack travel mm	: 758 : 12.20
	Ţ		
governor spring pre-tension	1	Rated speed rpm Tolerance 1/min	: 805 : +- 4
click setting x : 5.30	Ŧ	rack travel mm	4.00
		rack travel mm	: 0.85
FULL LOAD DELIVERY AT FULL LOAD S	этор 🕂	Tolerance mm	: +- 0.55
Rated speed rpm : 720	1	Rated speed rpm	: 900
Aneroid pressure	+	Rated speed rpm	: 759
hPa : - Del. quantity	1	rack travel mm	: 12.20
cm3/1000 strokes : 165.0	+	Rated speed rpm	: 806
Tolerance cm3/1000 strokes : +- 1.0	1	Tolerance 1/min rack travel mm	: +- 4
Check tolerance	+		
cm3/1000s. : +- 3.0 Spreed	1	rack travel mm Tolerance mm	: 0.85 : +- 0.55
Tolerance	+	Rated speed rpm	900
cm3/1000 strokes : 3.5 Check tolerance	1	Rated speed rpm	: 760
cm3/1000s. : 8.0	+	rack travel mm	: 12.20
	1	Rated speed rpm	: 807
	+	Tolerance 1/min	: +- 4
CONTROL LEVER	‡	rack travel mm	: 4.00
	+	rack travel mm	: 0.85

: +- 0.55 Tolerance mm Rated speed rpm 900 761 Rated speed rpm : rack travel mm 12.20 808 Rated speed rpm : Tolerance 1/min : +-4 rack travel mm 4.00 rack travel mm 0.85 Tolerance mm 0.55 Rated speed rpm 900

## LOW IDLE

control lever position degree : 77.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 400 rack travel mm : 3.50

## Testing:

Rated speed rpm : 400 rack travel mm : 4.00 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 425
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

### TORQUE CONTROL

Rated speed rpm : 720 rack travel mm : 13.25 Tolerance mm : +- 0.05

Rated speed rpm : 550 rack travel mm : 13.30 Tolerance mm : + 0.10

Rated speed rpm : 410 rack travel mm : 14.70 Tolerance mm : + 0.30

### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 166.0
Tolerance
cm3/1000 strokes : + 8.0
Check tolerance
cm3/1000s. : + 11.0

## LOW IDLE

Del. quantity cm3/1000 strokes : 11.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 08.04.96 Edition Test oil : ISO 4113

Combination No. : 9 400 085 379

Injection pump

Pump designation : PES6A95D410RS2772 EP type number : 9 400 084 018

Governor

Governer design. : RQV300...1300AB1277L

Governer no. : 9 420 080 355

Cust. part No. :

Customer-spec. information Customer : MBB : OM 366 A Motor : 125.0 Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

### REMARKS

## (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.55 Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 91.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance : +- 3.0 cm3/1000s.

Spreed Tolerance

cm3/1000 strokes : 3.5

Check tolerance

: 8.0 cm3/1000s.

1	Spreed
Del. quantity	Tolerance
cm3/1000 strokes : 11.0	cm3/1000 strokes : 3.5
Tolerance	Check tolerance
cm3/1000 strokes : +- 2.0 +	cm3/1000s. : 8.0
Check tolerance	· 0.0
cm3/1000s. : +- 4.5	
Spreed	
Tolerance	CONTROL LEVER
cm3/1000 strokes : 5.5	CONTROL LEVER
Check tolerance	control lever
cm3/1000s. : 9.0	position degree : 108.0
CIID7 (10005	tolerance degree : +- 4.0
T	toterance degree : +- 4.0
(B) SETTING OF INJECTION PUMP	RATED SPEED
	KATED SPEED
WITH GOVERNOR +	modulational man a 0.50
7	rack travel mm : 9.50
CHAPT OF THE TRANS	Rated speed rpm : 1350
GUIDE SLEEVE TRAVEL	Tolerance 1/min : +- 5
Rated speed rpm : 300	rack travel mm : 4.00
guide steeve	Rated speed rpm : 1475
travel mm : 1.05 +	Tolerance 1/min : + 15
Tolerance mm : + 0.25	mode described and a C 50
7-1-1	rack travel mm : 0.50
Rated speed rpm : 1500	Tolerance mm : + 0.50
guide sleeve	Rated speed rpm : 1650
travel mm : 8.55	
Tolerance mm : + 0.05	
T	1.01.751.00
Rated speed rpm : 500 +	LOW IDLE
guide sleeve +	
travel mm : 2.55	
Tolerance mm : $\leftarrow$ 0.25 $+$	control lever
	position degree : 68.0
Rated speed rpm : 750 +	tolerance degree : +- 4.0
guide sleeve +	
travel mm : 4.20 +	Testing:
Tolerance mm : + 0.10 +	- · · ·
<u>†</u>	Rated speed rpm : 300
	rack travel mm : 7.00 Tolerance mm : +- 0.10
GUIDE SLEEVE POSITION	Tolerance mm : +- U.1U
4500	200
Rated speed rpm : 1500 +	Rated speed rpm : 100
†	
Rack travel in mm: 16.50	CRT mm min. $:>8.00$
Tolerance mm : + 1.30 +	
<del>†</del>	Rated speed rpm : 325
FULL LOAD DELIVERY AT FULL LOAD STOP	
<u> </u>	TORQUE CONTROL
Rated speed rpm : 1300	n
Aneroid pressure	Rated speed rpm : 1300
hPa : 800	rack travel mm : 10.55 Tolerance mm : + 0.05
Del. quantity +	Tolerance mm : +- 0.05
cm3/1000 strokes : 91.0 +	
Tolerance +	Rated speed rpm : 800 rack travel mm : 11.25 Tolerance mm : +- 0.05
cm3/1000 strokes : +- 1.0 +	rack travel mm : 11.25
Check tolerance +	Tolerance mm : +- 0.05
cm3/1000s. : + 3.0 +	
·	

Rated speed rpm : 1000 rack travel mm : 11.00 Tolerance mm : + 0.10	Tolerance - cm3/1000 strokes : +- 2.0 - Check tolerance - cm3/1000s. : +- 4.0
ANEROID/ALTITUDE COMPENSATOR TEST	Aneroid pressure hPa : - Rated speed rpm : 500
SETTING	+ Del. quantity + cm3/1000 strokes : 62.0 + Tolerance
Rated speed rpm : 500 Pressure hPa : 800	+ cm3/1000 strokes : + 1.0 + Check tolerance
rack travel mm : 11.45 Tolerance mm : + 0.05	- cm3/1000s. : +- 3.0
MEASUREMENT	BREAKAWAY
Pressure hPa : - Rated speed rpm : 500	Rack travel in mm: 9.50 Rated speed rpm: 1350
Rated speed rpm : 500	Tolerance 1/min : +- 5
Pressure hPa : 500 rack travel mm : 1.20	<u> </u>
Tolerance mm : + 0.10	STARTING FUEL DELIVERY
Pressure hPa : 310 rack travel mm : 0.45 Tolerance mm : + 0.05	Rated speed rpm : 100 rack travel mm : 13.30 Tolerance mm : + 0.10 Del. quantity
START CUT-OUT	+ cm3/1000 strokes : 82.5 + Tolerance + cm3/1000 strokes : +- 7.5
Rated speed rpm : > 100 Rated speed rpm : < 220	+ Check tolerance + cm3/1000s. : +- 10.0
Check speed 1/min :> 80 Check	
speed 1/min : < 240	LOW IDLE
FUEL DELIVERY CHARACTERISTICS	Del. quantity cm3/1000 strokes : 11.0 Tolerance
Aneroid pressure hPa : 800	cm3/1000 strokes : + 2.0 Check tolerance
Rated speed rpm : 800 Del. quantity	cm3/1000s. : +- 4.5 + Spreed
cm3/1000 strokes : 89.5 Tolerance	Tolerance cm3/1000 strokes : 5.5
cm3/1000 strokes : + 2.0	+ Check tolerance
Check tolerance cm3/1000s. : +- 4.0	+ cm3/1000s. : 9.0
Aneroid pressure hPa : 800	$\frac{1}{1}$
Rated speed rpm : 1000	$\frac{1}{4}$
Del. quantity cm3/1000 strokes : 91.5	

End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 10.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 085 380

Injection pump

Pump designation : PES6A95D12ORS2834 EP type number : 9 400 084 032

Governor

Governer design. : RSV400...1250A8C2284

Governer no. : 9 420 083 303

Cust. part No. : 3356006

Customer-spec. information : CUMMINS Customer : 6BT Motor : 112.0 Power KW

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

1.5 Inlet press. bar :

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar 173.5 : +- 1.5 Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 2.80 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

10.50 travel : +- 1.50 Tolerance mm Difference ° CS 2.50

BASIC SETTING

Rated speed rpm 1250

Rack travel in mm : 11.65 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 93.0

Tolerance cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : +- 3.0

1	
Spreed	control lever
Tolerance +	position degree : 111.0
cm3/1000 strokes : 3.5	tolerance degree : +- 4.0
Charle to Language	DATED COULD
Check tolerance + cm3/1000s. : 8.0	RATED SPEED
Tillo / (0005 0.0 ]	rack travel mm : 10.60
Del. quantity	Rated speed rpm : 1300
cm3/1000 strokes : 11.0	Tolerance 1/min : + 5
Tolerance	\
cm3/1000 strokes : + 2.0 +	rack travel mm : 4.00
Check tolerance + 4.5 + 4.5	Rated speed rpm : 1355 Tolerance 1/min : +- 15
Spreed	roceratice tribitis
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5	Tolerance mm : $\leftarrow$ 0.55
Check tolerance	Rated speed rpm : 1450
cm3/1000s. : 9.0	
I	
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR +	
+	
	control lever position degree : 72.0
GUIDE SLEEVE POSITION	tolerance degree : +- 4.0
-	to to talloo dog. oo
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.65	Rated speed rpm : 400
Tolerance mm : + 0.35	rack travel mm : 4.50
governor spring +	Testing:
pre-tension	reschig.
click setting x : 5.00	Rated speed rpm : 400
+	rack travel mm : 5.00
THE CAR ATTEMPT AT THE LOAD STOR	Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00
Rated speed rpm : 1250	Rated speed rpm : 505
Aneroid pressure	Tolerance 1/min : +- 30
hPa : - +	
Del. quantity +	Rated speed rpm : 100
cm3/1000 strokes : 93.0	CDT > 40.00
Tolerance + 1.0 + +	CRT mm min. : > 19.00
Check tolerance	
cm3/1000s. : +- 3.0	TORQUE CONTROL
Spreed	
Tolerance	Rated speed rpm : 1250
cm3/1000 strokes : 3.5 + Check tolerance	rack travel mm : 11.65 Tolerance mm : +- 0.05
cm3/1000s. : 8.0	TO LET GITCE HAIL
1	Rated speed rpm : 500
+	rack travel mm : 11.70
	Tolerance mm : +- 0.10
CONTROL LEVER	Rated speed rpm : 750
Ĭ	Rated speed rpm : 750 rack travel mm : 11.65
Τ	THE CHARGE HARD A TELEVISION OF THE CONTRACT O

Tolerance mm : +- 0.05 400 Rated speed rpm 12,40 rack travel mm : **←** 0.30 Tolerance mm FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 750 Rated speed rpm Del. quantity cm3/1000 strokes : 92.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s.4.0 **BREAKAWAY** Rack travel in mm: 10.60 Rated speed rpm : 1300 Tolerance 1/min STARTING FUEL DELIVERY Rated speed rpm 100 rack travel mm 20.00 : Tolerance mm : +- 1.00 Del. quantity cm3/1000 strokes : 125.0 Tolerance cm3/1000 strokes : +- 10.0Check tolerance cm3/1000s. : +- 13.0 LOW IDLE Del. quantity cm3/1000 strokes : 11.0 Tolerance 2.0 cm3/1000 strokes Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes 5.5

9.0

End of test specification sheet

Check tolerance cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.04.96 Test oil : ISO 4113

: 9 400 085 380FB Combination No.

Injection pump

Pump designation : PES6A95D12ORS2834 : 9 400 084 032 EP type number

Governor

: RSV400...1250A8C2284 Governer design.

: 9 420 083 303 Governer no.

Cust. part No. : 3356187-VERSA051

Customer-spec. information : CUMMINS Customer Motor : 6BT Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

: 1 419 992 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0 x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 2.80 : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

travel 10.50 : **←** 1.50 Tolerance mm Difference \* CS : 2.50

BASIC SETTING

Rated speed rpm 1150

Rack travel in mm : 10.75 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 83.0

Tolerance cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 3.0

1	
Spreed Tolerance cm3/1000 strokes : 3.5	control lever position degree : 55.0 tolerance degree : +- 4.0
Check tolerance cm3/1000s. : 8.0	<pre>control lever position degree : 105.0 tolerance degree : +- 4.0</pre>
Del. quantity cm3/1000 strokes : 11.0	RATED SPEED
cm3/1000 strokes : + 2.0 +	rack travel mm : 9.70
Check tolerance + 4.5 + Spreed + + + + + + + + + + + + + + + + + +	Rated speed rpm : 1195 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : 5.5	rack travel mm : 4.00 Rated speed rpm : 1245
Check tolerance + cm3/1000s. : 9.0 +	Tolerance 1/min : +- 15
(B) SETTING OF INJECTION PUMP	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1350
WITH GOVERNOR	Rated speed rpm : 1330
	LOW IDLE
GUIDE SLEEVE POSITION	
Rated speed rpm : 800	control lever position degree : 74.0
Rack travel in mm: 0.65 Tolerance mm: + 0.35	tolerance degree : + 4.0
governor spring +	control lever position degree : 24.0
pre-tension + click setting x : 5.00 +	tolerance degree : +- 4.0
	Setting point w/out bumper spring
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 450 rack travel mm : 4.40
Rated speed rpm : 1150 + Aneroid pressure	Testing:
hPa : - + Del. quantity +	Rated speed rpm : 450
cm3/1000 strokes : 83.0 +	rack travel mm : 4.90
Tolerance + 1.0 +	Tolerance mm : + 0.10
Check tolerance	rack travel mm : 2.00
cm3/1000s. : + 3.0 + Spreed + Talanana	Rated speed rpm : 540 Tolerance 1/min : + 30
Tolerance + cm3/1000 strokes : 3.5 + Check tolerance + -	Rated speed rpm : 100
cm3/1000s. : 8.0	CRT mm min. : > 19.00
+	TORQUE CONTROL
CONTROL LEVER	Rated speed rpm : 1150
<del>-</del>	rack travel mm : 10.75

Tolerance mm	: +- 0.05
Rated speed rpm	: 630
rack travel mm	: 10.80
Tolerance mm	: + 0.10
Rated speed rpm	: 750
rack travel mm	: 10.75
Tolerance mm	: + 0.05
Rated speed rpm	: 400
rack travel mm	: 11.70
Tolerance mm	: +- 0.30

<b>FUEL</b>	DELIVERY	CHARACTERISTICS
-------------	----------	-----------------

Aneroid pressure		
hPa	:	-
Rated speed rpm	:	750
Del. quantity		
cm3/1000 strokes	•	78.0
Tolerance		
cm3/1000 strokes	: +	- 2.0
Check tolerance		

: +- 4.0

# BREAKAWAY

cm3/1000s.

Rack travel in	mm :	9.70
Rated speed rpm	:	1195
Tolerance 1/min	:	+- 5

# STARTING FUEL DELIVERY

Rated speed rpm rack travel mm	: 100 : 20.00
Tolerance mm Del. quantity	: + 1.00
Tolerance	: 125.0
cm3/1000 strokes Check tolerance	: +- 10.0
cm3/1000s.	: +- 13.0

# LOW IDLE

Del. quantity		
cm3/1000 strokes	•	11.0

Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	5.5
Check tolerance		
cm3/1000s.	:	9.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 10.04.96 : ISO 4113

Combination No.

: 9 400 085 381

Injection pump

Pump designation : PES6A100D120RS2868

EP type number

: 9 400 084 037

Governor

Governer design. : RSV450...1200A0C2289

Governer no.

: 9 420 083 304

Cust. part No. : 3927763

Customer-spec. information Customer : CUMMINS Motor : 6BT

Power KW

81.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C ; +- 2.0 Tolerance °C

: 1 419 992 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

: 1 680 750 014 Test lines

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm 2.90 Tolerance mm : +- 0.05 Check tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

## Beginning of delivery differende

and maximum rack

travel 10.50 Tolerance mm : + 1.50 Difference ° CS :

### BASIC SETTING

1200 Rated speed rpm

8.75 Rack travel in mm: Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes :

76.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000S. : **←** 3.0

+	
Spreed Tolerance cm3/1000 strokes : 3.5	control lever position degree : 112.0 tolerance degree : +- 4.0
Check tolerance cm3/1000s. : 8.0	RATED SPEED rack travel mm : 7.70
Del. quantity cm3/1000 strokes : 23.5	rack travel mm : 7.70 Rated speed rpm : 1245 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : +- 2.0 +	rack travel mm : 4.00
Check tolerance cm3/1000s. : +- 4.5	Rated speed rpm : 1310 Tolerance 1/min : +- 15
Spreed + Tolerance + cm3/1000 strokes : 5.5 +	rack travel mm : 0.85 Tolerance mm : +- 0.55
Check tolerance	Tolerance mm : +- 0.55 Rated speed rpm : 1400
cm3/1000s. : 9.0	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
‡	control lever
GUIDE SLEEVE POSITION +	position degree : 87.0 tolerance degree : +- 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Rated speed rpm : 350 rack travel mm : 5.10
governor spring pre-tension	Testing:
click setting $x : 5.75$	Rated speed rpm : 350 rack travel mm : 5.60
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
+	rack travel mm : 2.00 Rated speed rpm : 505
Rated speed rpm : 1200 Aneroid pressure	Rated speed rpm : 505 Tolerance 1/min : + 30
hPa : - + Del. quantity + cm3/1000 strokes : 76.0 +	Rated speed rpm : 100
Tolerance	CRT mm min. : > 19.00
cm3/1000 strokes : +- 1.0 Check tolerance +- 7/10000	TORQUE CONTROL
cm3/1000s. : + 3.0 + Spreed	
Tolerance cm3/1000 strokes : 3.5	Rated speed rpm : 1200 rack travel mm : 8.75 Tolerance mm : +- 0.05
Check tolerance cm3/1000s. : 8.0	
‡	Rated speed rpm : 650 rack travel mm : 9.05
CONTROL LEVER	Tolerance mm : + 0.05
‡	Rated speed rpm : 880 rack travel mm : 9.05

Tolerance mm : +- 0.05 Rated speed rpm : 1030 rack travel mm : 8.75 Tolerance mm : +- 0.05 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.0 BREAKAWAY Rack travel in mm : 7.70 Rated speed rpm : 1245 Tolerance 1/min : +-STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.00 : +- 1.00 Tolerance mm Del. quantity cm3/1000 strokes : 168.0 Tolerance cm3/1000 strokes : +- 8.0 Check tolerance cm3/1000s. : +- 11.0 LOW IDLE Del. quantity cm3/1000 strokes : 23.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance

5.5

9.0

End of test specification sheet

K23

cm3/1000 strokes :

Check tolerance

cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 383

Injection pump

Pump designation : PES6A95D410RS2772 EP type number : 9 400 084 018

Governor

Governer design. : RQV300...1300AB1066

: -13L

Governer no. : 9 420 080 332

Cust. part No. :

Customer-spec. information

Customer : MBB

Motor : OM 366 LA-EURO 1

Power KW : 147.1

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.25
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.45
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 104.0

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance cm3/1000s.

cm3/1000s. : + 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.

3.5

Check tolerance

cm3/1000s. : 8.0

1.	Spreed
Del. quantity	Tolerance
cm3/1000 strokes : 11.0	cm3/1000 strokes : 3.5
Tolerance	Check tolerance
cm3/1000 strokes : +- 2.0 +	cm3/1000s. : 8.0
Check tolerance +	
cm3/1000s. : +- 4.5 +	
Spreed	CONTROL LEVED
Tolerance + cm3/1000 strokes : 5.5 +	CONTROL LEVER
Check tolerance	control lever
cm3/1000s. : 9.0	position degree : 60.0
1	tolerance degree : +- 4.0
+	·
(B) SETTING OF INJECTION PUMP	control lever
WITH GOVERNOR +	position degree : 109.0
†	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	RATED SPEED
+	
Rated speed rpm : 300	rack travel mm : 10.60
guide sleeve +	Rated speed rpm : 1360
travel mm : 1.05	Tolerance 1/min : +- 5
Tolerance mm : + 0.25	rack travel mm : 4.00
Rated speed rpm : 1500	Rated speed rpm : 1505
	Tolerance 1/min : +- 15
guide sleeve + travel mm : 8.55 +	
Tolerance mm : + 0.05	rack travel mm : 0.50
+	Tolerance mm : +- 0.50
Rated speed rpm : 500 +	Rated speed rpm : 1650
guide sleeve	
travel mm : 2.55	
Tolerance mm : + 0.25	LOW IDLE
Rated speed rpm : 750	
guide sleeve	
travel mm : 4.20 +	control lever
Tolerance mm : + 0.10 +	position degree : 68.0
+	tolerance degree : +- 4.0
CHINE SI FEUE DOCTITON	control lever
GUIDE SLEEVE POSITION	position degree : 19.0
Rated speed rpm : 1500	tolerance degree : +- 4.0
Traded opeca i piii . 1500	TO THE MEDICAL PROPERTY OF THE
Rack travel in mm: 16.50	Testing:
Tolerance mm : + 1.30	·
+	Rated speed rpm : 300
THE LOAD BELVIEW AT THE LOAD STAD	rack travel mm : 7.00
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
Rated speed rpm : 1300	Rated speed rpm : 100
Aneroid pressure	14400 Open   pin   100
hPa : 900	CRT mm min. :> 8.00
Del. quantity +	
cm3/1000 strokes : 104.0 +	Rated speed rpm : 375
Tolerance	
cm3/1000 strokes : + 0.5	TOPOUT CONTROL
Check tolerance + 2.5 + 2.5	TORQUE CONTROL
cm3/1000s. : + 2.5 +	

Rated speed rpm : 1300 +	Aneroid pressure
rack travel mm : 11.45 + O.05 +	hPa : -
Tolerance mm : + 0.05 +	Rated speed rpm : 500
†	Del. quantity
Rated speed rpm : 800	cm3/1000 strokes : 60.0
rack travel mm : 11.45 + Tolerance mm : + 0.05	Tolerance cm3/1000 strokes : +- 1.0
Toterance min : +- 0.05	Check tolerance
	cm3/1000s. : +- 3.0
ANEROID/ALTITUDE +	3.0
COMPENSATOR TEST	
<del>}</del>	BREAKAWAY
+	
SETTING	5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Rated speed rpm : 500	Rack travel in mm: 10.60
Rated speed rpm : 500 + Pressure hPa : 900 +	Rated speed rpm : 1360 Tolerance 1/min : +- 5
rack travel mm : 11.45	Toterance Timen : The S
Tolerance mm : + 0.05	
-	
MEASUREMENT	STARTING FUEL DELIVERY
<u> </u>	
Pressure hPa : - +	Rated speed rpm : 100
Rated speed rpm : 500	rack travel mm : 12.90
Rated speed rpm : 500	Toterance mm : + 0.10
Rated speed rpm : 500	Del. quantity cm3/1900 strokes : 76.5
Pressure hPa : 340	Tolerance
rack travel mm : 0.40	cm3/1000 strokes : +- 7.5
Tolerance mm : +- 0.10	Check tolerance
+	cm3/1000s. : +- 10.0
Pressure hPa : 560 +	
rack travel mm : 1.35 +	
Tolerance mm : +- 0.05 +	
	LOW IDLE
START CUT-OUT	FOM IDEE
1	Del. quantity
Rated speed rpm : > 100 +	cm3/1000 strokes : 11.0
Rated speed rpm : < 220 +	Tolerance
<u> </u>	cm3/1000 strokes : +- 2.0
Check +	Check tolerance
speed 1/min :> 80 +	cm3/1000s. : +- 4.5 Spreed
speed 1/min : < 240	Tolerance
speed 1/111/11	cm3/1000 strokes : 5.5
	Check tolerance
FUEL DELIVERY CHARACTERISTICS +	cm3/1000s. : 9.0
+	
Aneroid pressure +	
hPa : 900 +	
Rated speed rpm : 800	
Del. quantity + cm3/1000 strokes : 94.5 +	
cm3/1000 strokes : 94.5 + Tolerance	End of test specification sheet
cm3/1000 strokes : +- 2.0 +	List of test specification sheet
Check tolerance	
cm3/1000s. : +- 4.0	
-	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 384

Injection pump

Pump designation : PES4A95D410RS2887 EP type number : 9 400 084 040

Governor

Governer design. : RQV300...1300AB1307L

Governer no. : 9 420 080 385

Cust. part No. : 0260745402

Customer-spec. information

Customer : MBB

Motor : OM 364A/ EURO I

Power KW : 81.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.95
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

COCCI GITO THE

Rack travel in mm : 16.00 Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

## BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.85
Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 85.0

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

Spreed Tolerance

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s. : 8.0

Del. quantity +	Tolerance
cm3/1000 strokes : 9.0	cm3/1000 strokes : 3.5 Check tolerance
cm3/1000 strokes : +- 2.0 +	cm3/1000s. : 8.0
Check tolerance cm3/1000s. : +- 4.5	
Spreed +	
Tolerance + cm3/1000 strokes : 5.5 +	CONTROL LEVER
Check tolerance +	control lever
cm3/1000s. : 9.0	position degree : 61.0 tolerance degree : +- 4.0
<del>-</del>	-
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 109.0
WITH GOVERNOR	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	RATED SPEED
Rated speed rpm : 300	rack travel mm : 9.80
guide sleeve	Rated speed rpm : 1345
travel mm : 1.05 + 0.25	Tolerance 1/min : +- 5
+	rack travel mm : 4.00
Rated speed rpm : 1500 + guide sleeve +	Rated speed rpm : 1460 Tolerance 1/min : +- 15
travel mm : 9.15	roceratice triain : 1- 13
Tolerance mm : + 0.05	rack travel mm : 0.50 Tolerance mm : +- 0.50
Rated speed rpm : 500	Tolerance mm : +- 0.50 Rated speed rpm : 1580
guide sleeve	·
August 1 mm	
travel mm : 2.55 + Tolerance mm : + 0.25 +	
Tolerance mm : + 0.25	LOW IDLE
Tolerance mm : + 0.25 + Rated speed rpm : 750 +	LOW IDLE
Tolerance mm : + 0.25  Rated speed rpm : 750 guide sleeve travel mm : 4.20	control lever
Tolerance mm : + 0.25  Rated speed rpm : 750 guide sleeve	control lever position degree : 70.0
Tolerance mm : + 0.25  Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : + 0.10	control lever position degree : 70.0 tolerance degree : +- 4.0
Tolerance mm : + 0.25  Rated speed rpm : 750 guide sleeve travel mm : 4.20	control lever position degree : 70.0
Tolerance mm : + 0.25  Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : + 0.10	<pre>control lever position degree : 70.0 tolerance degree : +- 4.0 control lever</pre>
Tolerance mm : + 0.25  Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : + 0.10  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50	control lever position degree : 70.0 tolerance degree : +- 4.0  control lever position degree : 21.0
Tolerance mm : + 0.25  Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : + 0.10  GUIDE SLEEVE POSITION  Rated speed rpm : 1440	control lever position degree : 70.0 tolerance degree : +- 4.0  control lever position degree : 21.0 tolerance degree : +- 4.0  Testing:
Tolerance mm : + 0.25  Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : + 0.10  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30	control lever position degree : 70.0 tolerance degree : +- 4.0  control lever position degree : 21.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 8.00
Tolerance mm : + 0.25  Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : + 0.10  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50	control lever position degree : 70.0 tolerance degree : +- 4.0  control lever position degree : 21.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 300
Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : + 0.10  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300	control lever position degree : 70.0 tolerance degree : +- 4.0  control lever position degree : 21.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 8.00
Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : 4.20  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 700	control lever position degree : 70.0 tolerance degree : +- 4.0  control lever position degree : 21.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 8.00 Tolerance mm : +- 0.10
Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : + 0.10  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure	control lever position degree : 70.0 tolerance degree : +- 4.0  control lever position degree : 21.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100
Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : 4.20  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 85.0 Tolerance	control lever position degree : 70.0 tolerance degree : +- 4.0  control lever position degree : 21.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. : > 9.00
Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : 4.20 GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 85.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	control lever position degree : 70.0 tolerance degree : +- 4.0  control lever position degree : 21.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. : > 9.00
Rated speed rpm : 750 guide sleeve travel mm : 4.20 Tolerance mm : 4.20  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1300 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 85.0 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 70.0 tolerance degree : +- 4.0  control lever position degree : 21.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 8.00 Tolerance mm : +- 0.10  Rated speed rpm : 100  CRT mm min. : > 9.00  Rated speed rpm : 415

rack travel mm Tolerance mm		+ Check tolerance - cm3/1000s. : +- 4.0
Rated speed rpm rack travel mm Tolerance mm	: 11.55	Aneroid pressure hPa : - Rated speed rpm : 500
Rated speed rpm rack travel mm Tolerance mm ANEROID/ALTITUDE	: 11.15 : +- 0.05	Del. quantity cm3/1000 strokes : 58.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0
COMPENSATOR TEST		BREAKAWAY
SETTING  Rated speed rpm Pressure hPa rack travel mm	: 500 : 700 : 11.55	Rack travel in mm : 9.80 Rated speed rpm : 1345 Tolerance 1/min : +- 5
Tolerance mm  MEASUREMENT	: +- 0.05	STARTING FUEL DELIVERY
Pressure hPa Rated speed rpm	: - : 500	Rated speed rpm : 100
	: 500	rack travel mm : 13.30 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 83.0
Pressure hPa rack travel mm Tolerance mm	: 300 : 0.35 : + 0.05	Tolerance cm3/1000 strokes : +- 7.5 Check tolerance cm3/1000s. : +- 10.0
Pressure hPa rack travel mm Tolerance mm	: 0.70	- 10.0
START CUT-OUT		LOW IDLE
Rated speed rpm Rated speed rpm	: > 100 : < 220	Del. quantity cm3/1000 strokes : 9.0 Tolerance cm3/1000 strokes : +- 2.0
Check speed 1/min Check	: > 80	Check tolerance cm3/1000s. : +- 4.5
speed 1/min	: < 240	Tolerance cm3/1000 strokes : 5.5 Check tolerance
FUEL DELIVERY CHA	ARACTERISTICS -	cm3/1000s. : 9.0
Aneroid pressure hPa Rated speed rpm Del. quantity	: 700 : 800	
cm3/1000 strokes Tolerance cm3/1000 strokes	4	End of test specification sheet

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.04.96 Test oil : ISO 4113

Combination No. : 9 400 030 752

Injection pump

Pump designation : PES4A95D320/3RS2880

EP type number : 9 410 037 214

Governor

Governer design. : RSV475...1100A0C867R

Governer no. : F 002 A20 203

Cust. part No. : 3930151

Customer—spec. information Customer : CUMMINS Motor : 48T Power KW : 66.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.60
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-240

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.50 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 92.8

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes :

4.0

Check tolerance cm3/1000s.

6.5

:

L02

Del. quantity +	
cm3/1000 strokes : 18.5	rack travel mm : 4.00
Tolerance	Rated speed rpm : 1250
cm3/1000 @crokes : + 2.0 +	mode through my a 0.95
Check tolerance + 4.5 +	rack travel mm : 0.85 Tolerance mm : +- 0.55
Spreed	Rated speed rpm : 1300
Tolerance	
cm3/1000 strokes : 6.0	rack travel mm : 4.00
Check tolerance +	Rated speed rpm : 1260
cm3/1000s. : 8.0	
I	
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR +	
+	
	control lever position degree : 87.0
GUIDE SLEEVE POSITION	tolerance degree : +- 4.0
-	toterante degree 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.50	Rated speed rpm : 475
Tolerance mm : + 0.20 +	rack travel mm : 6.35
<u> </u>	
governor spring +	Testing:
pre-tension + click setting x : 4.00 +	Rated speed rpm : 475
+ + + + + + + + + + + + + + + + + + +	rack travel mm : 6.85
	Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	
1400	Rated speed rpm : 100
Rated speed rpm : 1100 + Aneroid pressure	CRT mm min. : > 19.00
hPa : -	CRI ANN IGITI
Del. quantity	
cm3/1000 strokes : 92.8	TORQUE CONTROL
Tolerance	~
cm3/1000 strokes : + 1.0 +	Rated speed rpm : 1100 rack travel mm : 12.50
Check tolerance + 3.0 +	rack travel mm : 12.50 Tolerance mm : +- 0.05
Spreed	TO COT GIVE THAT
Tolerance	Rated speed rpm : 750
7/4000	
cm3/1000 strokes : 4.0 +	Rated speed rpm : 750 rack travel mm : 13.15
Check tolerance	rack travel mm : 13.15 Tolerance mm : +- 0.20
	rack travel mm : 13.15 Tolerance mm : + 0.20
Check tolerance	rack travel mm : 13.15 Tolerance mm : +- 0.20
Check tolerance	rack travel mm : 13.15 Tolerance mm : + 0.20
Check tolerance	Tolerance mm : +- 0.20
Check tolerance cm3/1000s. : 6.5  CONTROL LEVER	rack travel mm : 13.15 Tolerance mm : +- 0.20  FUEL DELIVERY CHARACTERISTICS
Check tolerance cm3/1000s. : 6.5  CONTROL LEVER control lever	FUEL DELIVERY CHARACTERISTICS
Check tolerance cm3/1000s. : 6.5  CONTROL LEVER control lever position degree : 105.0	FUEL DELIVERY CHARACTERISTICS  Aneroid pressure
Check tolerance cm3/1000s. : 6.5  CONTROL LEVER control lever	FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : -
Check tolerance cm3/1000s. : 6.5  CONTROL LEVER control lever position degree : 105.0	FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : - Rated speed rpm : 750 Del. quantity
Check tolerance cm3/1000s. : 6.5  CONTROL LEVER  control lever position degree : 105.0 tolerance degree : + 4.0  RATED SPEED	FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : - Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 99.6
Check tolerance cm3/1000s. : 6.5  CONTROL LEVER  control lever position degree : 105.0 tolerance degree : 4.0  RATED SPEED  rack travel mm : 11.50	FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : - Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 99.6 Tolerance
Check tolerance cm3/1000s. : 6.5  CONTROL LEVER  control lever position degree : 105.0 tolerance degree : + 4.0  RATED SPEED	FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : - Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 99.6

Check tolerance cm3/1000s. : +- 4.0 **BREAKAWAY** Rack travel in mm : 11.5
Rated speed rpm : 1145
Tolerance 1/min : +-11.50 STARTING FUEL DELIVERY 100 Rated speed rpm : rack travel mm : 20.50 : +- 0.50 Tolerance mm Del. quantity cm3/1000 strokes : 120.5 Tolerance cm3/1000 strokes : + 10.0 Check tolerance cm3/1000s. : + 15.0 LOW IDLE Del. quantity cm3/1000 strokes : 18.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.04.96 : ISO 4113

Combination No. : 0 402 076 779

Injection pump

Pump designation : PES6P12DA72ORS3352

EP type number : 0 412 026 780

Governor

Governer design. : RSV400...900P4A611

Governer no.

: 0 421 833 489

Cust. part No. : RE63767

Customer-spec. information Customer : DEERE

Motor

: 6081AF001

Power KW

: 150.0

TEST BENCH REQUIREMENTS

Inlet line

: 4.2

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve

: 1 457 413 010

Inlet press. bar :

2.0

Test nozzle holde

assembly

: 1 688 901 103

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0

x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +-1.0

Prestroke mm 3.60 Tolerance mm : + - 0.05

Check

: + 0.10tolerance mm

Rack travel in mm: 10.50

: +- 1.50 Tolerance mm

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

: + - 0.30Tolerance

Check

: +- 0.75 tolerance °NW

Start of delivery mark

\*NW after s.o.d. : 7.00 Tolerance : + - 0.50

Check

tolerance °NW : + 0.75

Barrel no.

: 1

Beginning of delivery differende

and maximum rack

travel 14.00 Difference ° CS :

2.50

BASIC SETTING

Rated speed rpm :

800

	- Check tolerance - cm3/1000s. : +- 3.0
Rack travel in mm: 13.90 Tolerance mm: +- 0.05	- Spreed - Tolerance
Del. quantity	- cm3/1000 strokes : 4.0 - Check tolerance
cm3/1000 strokes : 219.5	- cm3/1000s. : 6.5
Tolerance cm3/1000 strokes : + 1.0	- CONTROL LEVER
Check tolerance cm3/1000s. : + 3.0	control lever position degree : 100.0
Spreed Tolerance	- tolerance degree : + 4.0
cm3/1000 strokes : 4.0	RATED SPEED
Check tolerance cm3/1000s. : 6.5	rack travel mm : 12.90 Rated speed rpm : 910 Tolerance 1/min : +- 5
Del. quantity cm3/1000 strokes : 25.5 Tolerance	rack travel mm : 4.00 Rated speed rpm : 950
cm3/1000 strokes : +- 3.0 Check tolerance	Tolerance 1/min : +- 5
cm3/1000s. : +- 5.0 +- 5.0	rack travel mm : 0.85 Tolerance mm : + 0.55
Tolerance cm3/1000 strokes : 6.0	Rated speed rpm : 1020
Check tolerance cm3/1000s. : 8.0	rack travel mm : 4.00 Rated speed rpm : 970
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION	control lever position degree : 77.0 tolerance degree : +- 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Rated speed rpm : 400 rack travel mm : 4.65
governor spring + pre-tension + click setting x : 4.75	Testing:
	Rated speed rpm : 400 rack travel mm : 5.15
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.10
Rated speed rpm : 800 + Aneroid pressure	Rated speed rpm : 100
hPa : - +	CRT mm min. : > 19.00
Del. quantity cm3/1000 strokes : 219.5	TARALE CONTROL
Tolerance cm3/1000 strokes : +- 1.0	TORQUE CONTROL

Rated speed rpm rack travel mm Tolerance mm	: :		800 13.90 0.05	
START CUT-OUT			·····	
Rated speed rpm	:	>	100	
Check speed 1/min	:	>	80	
BREAKAWAY			<del></del>	
Rack travel in mm Rated speed rpm Folerance 1/min	:	+-	12.90 910 5	
STARTING FUEL DEL	EVE	RY		
Rated speed rpm rack travel mm Folerance mm	:	+	100 20.50 0.50	
Del. quantity cm3/1000 strokes	:		105.0	
Tolerance cm3/1000 strokes Check tolerance	:	+-	20.0	
cm3/1000s.	:	+-	25.0	
.OW IDLE				
pel. quantity m3/1000 strokes Tolerance	:		25,5	
m3/1000 strokes theck tolerance	:	+-	3.0	
m3/1000s. preed	:	+	5.0	
olerance m3/1000 strokes	:		6.0	
heck tolerance m3/1000s.	:		8.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 10.04.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 076 780

Injection pump

Pump designation : PES6P120A720RS3352

EP type number : 0 412 026 780

Governor

Governer design. : RSV400...900P4A606

Governer no. : 0 421 833 490

Cust. part No. : RE62644

Customer-spec. information Customer : DEERE : 6081AF001 Motor : 150.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm

: +- 0.05 Tolerance mm

Check

: + - 0.10tolerance mm

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

tolerance °NW : + 0.75

Start of delivery mark

\*NW after s.o.d. : 7.00 Tolerance : +- 0.50

Tolerance Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel 14.00 Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm: 13.90 Tolerance mm: +- 0.05	Check tolerance cm3/1000s. : +- 3.0 Spreed Tolerance
Del. quantity	cm3/1000 strokes : 4.0
cm3/1000 strokes : 219.5	cm3/1000s. : 6.5
Tolerance cm3/1000 strokes : +- 1.0	CONTROL LEVER
Check tolerance cm3/1000s. : +- 3.0	control lever position degree : 100.0
Spreed -	tolerance degree : +- 4.0
cm3/1000 strokes : 4.0	RATED SPEED
Check tolerance - cm3/1000s. : 6.5 - Del. quantity -	rack travel mm : 12.90 Rated speed rpm : 910 Tolerance 1/min : + 5
cm3/1000 strokes : 25.5 - Tolerance -	rack travel mm : 4.00 Rated speed rpm : 950
cm3/1000 strokes : + 3.0 - Check tolerance -	Tolerance 1/min : +- 5
cm3/1000S. : +- 5.0 Spreed Tolerance	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1020
cm3/1000 strokes : 6.0 - Check tolerance	rack travel mm : 4.00
cm3/1000s. : 8.0 -	Rated speed rpm : 970
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION	control lever position degree : 77.0 tolerance degree : +- 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm : 0.50 - Tolerance mm : + 0.20 -	Rated speed rpm : 400 rack travel mm : 4.65
governor spring pre-tension - click setting x : 4.75 -	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 400 - rack travel mm : 5.15 - Tolerance mm : +- 0.10
Rated speed rpm : 800	Rated speed rpm : 100
Aneroid pressure	CRT mm min. : > 19.00
Del. quantity cm3/1000 strokes : 219.5 Tolerance	- TORQUE CONTROL
cm3/1000 strokes : + 1.0	<del>}</del>

Tolerance mm	:	+-	0.05	
START CUT-OUT				
Rated speed rpm	;	>	100	
Check speed 1/min	:	>	80	
BREAKAWAY		<del></del>		
Rack travel in mm Rated speed rpm Tolerance 1/min		+	12.90 910 5	
STARTING FUEL DELI		ERY		
Rated speed rpm rack travel mm Tolerance mm	:	+-	100 20.50 0.50	
Del. quantity cm3/1000 strokes Tolerance	:		105.0	
cm3/1000 strokes Check tolerance	:	+-	20.0	
cm3/1000s.	:	+	25.0	
LOW IDLE	<del></del>		1	
Del. quantity cm3/1000 strokes	:		25.5	
Tolerance cm3/1000 strokes Check tolerance	:	+-	3.0	
cm3/1000s. Spreed	:	+	5.0	
Tolerance cm3/1000 strokes	:		6.0	
Check tolerance cm3/1000S.	:		8.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.04.96 Test oil : ISO 4113

Combination No. : 0 402 736 865

Injection pump

Pump designation : PES6P12OA12ORS7349 EP type number : 0 412 726 920

Governor

Governer design. : RQV400...1150PA1170K

Governer no. : 0 421 815 436

Cust. part No. : 3928148

Customer-spec. information Customer : CDC Motor : 6BTA-A Power KW : 156.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.50Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance 'NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 6.25 Tolerance : + 0.50

Check : +- U.St

tolerance °NW : +- 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.35
Tolerance mm : + 0.05

olerance mm : + U.U5

Del. quantity	
cm3/1000 strokes : 177.5	rack travel mm : 13.10
CIRDA LOGIC STROKES : TALLO	
Talanana	Rated speed rpm : 1315
Tolerance	Tolerance 1/min : + 15
cm3/1000 strokes : + 1.0 -	
	- rack travel mm : 4.00
Check tolerance	- Rated speed rpm : 1480
cm $3/1000$ s. : $+$ 4.0	- Tolerance 1/min : +- 5
	•
Spreed	- rack travel mm : 0.50
Tolerance	- Tolerance mm : + 0.50
cm3/1000 strokes : 8.0	- Rated speed rpm : 1600
	•
Check tolerance	_
cm3/1000s. : 12.0	
· · · · · · · · · · · · · · · · · · ·	- LOW IDLE
Del. quantity	-
cm3/1000 strokes : 15.0	-
Tolerance +	- control lever
cm3/1000 strokes : +- 3.0	- position degree : 72.0
Check tolerance	- tolerance degree : +- 6.0
cm3/1000s. : +- 5.0	•
Spreed	- Testing:
Tolerance +	<u>-</u>
cm3/1000 strokes : 4.0	- Rated speed rpm : 420
Check tolerance	- rack travel mm : 5.80
cm3/1000s. : 8.0 +	- Tolerance mm : +- 0.20
+	•
+	- Rated speed rpm : 300
(B) SETTING OF INJECTION PUMP	•
WITH GOVERNOR +	- CRT mm min. :> 8.80
1	
· · · · · · · · · · · · · · · · · · ·	
<u>'</u>	Rated speed rpm : 420
	Rated speed rpm : 420
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 420
FULL LOAD DELIVERY AT FULL LOAD STOP	
	Rated speed rpm : 420 TORQUE CONTROL
Rated speed rpm : 1150	TORQUE CONTROL
Rated speed rpm : 1150 Aneroid pressure	
Rated speed rpm : 1150 Anaroid pressure hPa : 1200	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity	TORQUE CONTROL  Rated speed rpm : 1150  rack travel mm : 14.35  Tolerance mm : +- 0.05
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5	TORQUE CONTROL  Rated speed rpm : 1150  rack travel mm : 14.35  Tolerance mm : +- 0.05
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance	TORQUE CONTROL  Rated speed rpm : 1150  rack travel mm : 14.35  Tolerance mm : +- 0.05
Rated speed rpm : 1150 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0	TORQUE CONTROL  Rated speed rpm : 1150  rack travel mm : 14.35  Tolerance mm : +- 0.05
Rated speed rpm : 1150 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35
Rated speed rpm : 1150 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20
Rated speed rpm : 1150 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250
Rated speed rpm : 1150 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250 rack travel mm : 14.20 Tolerance mm : +- 0.10
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250 rack travel mm : 14.20 Tolerance mm : +- 0.10  ANEROID/ALTITUDE
Rated speed rpm : 1150 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250 rack travel mm : 14.20 Tolerance mm : +- 0.10
Rated speed rpm : 1150 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000s trokes : + 1.0 Check tolerance cm3/1000s : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250 rack travel mm : 14.20 Tolerance mm : +- 0.10  ANEROID/ALTITUDE
Rated speed rpm : 1150 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250 rack travel mm : 14.20 Tolerance mm : +- 0.10  ANEROID/ALTITUDE COMPENSATOR TEST
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000s trokes : + 1.0 Check tolerance cm3/1000s : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s : 12.0  CONTROL LEVER	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250 rack travel mm : 14.20 Tolerance mm : +- 0.10  ANEROID/ALTITUDE
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000s trokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  CONTROL LEVER control lever	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250 rack travel mm : 14.20 Tolerance mm : +- 0.10  ANEROID/ALTITUDE COMPENSATOR TEST
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  CONTROL LEVER  control lever position degree : 118.0	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250 rack travel mm : 14.20 Tolerance mm : +- 0.10  ANEROID/ALTITUDE COMPENSATOR TEST
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000s trokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  CONTROL LEVER control lever	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250 rack travel mm : 14.20 Tolerance mm : +- 0.10  ANEROID/ALTITUDE COMPENSATOR TEST
Rated speed rpm : 1150 Anaroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 177.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0  CONTROL LEVER  control lever position degree : 118.0	TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 14.35 Tolerance mm : +- 0.05  Rated speed rpm : 800 rack travel mm : 12.60 Tolerance mm : +- 0.20  Rated speed rpm : 1250 rack travel mm : 14.20 Tolerance mm : +- 0.10  ANEROID/ALTITUDE COMPENSATOR TEST

Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 1150 : 10.30 : + 0.20
Rated speed rpm	: 1150
Pressure hPa rack travel mm Tolerance mm	: 685 : 13.40 : + 0.30
Pressure hPa rack travel mm Tolerance mm	: 425 : 11.45 : + 0.20
START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 100 : < 315
Check speed 1/min Check	: > 80
speed 1/min	: < 325
Aneroid pressure hPa Rated speed rpm	: 1200 : 800
Del. quantity cm3/1000 strokes Tolerance	: 146.0
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s. Spreed	: +- 6.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
Aneroid pressure hPa Rated speed rpm	: – : 1150
Del. quantity cm3/1000 scrokes	: 96.5
Tolerance cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s.	: +- 4.0
BREAKAWAY	

Rated speed rpm Tolerance 1/min	: 1315 : +- 15		
STARTING FUEL DELIVERY			
Rated speed rpm rack travel mm Tolerance mm Del. quantity	: 100 : 12.50 : +- 0.50		
cm3/1000 strokes Tolerance	: 155.0		
cm3/1000 strokes	: +- 20.0		
Check tolerance cm3/1000s.	: +- 25.0		
LOW IDLE  Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000S.	: 15.0 : +- 3.0 : +- 5.0 : 4.0 : 8.0		

End of test specification sheet

Rack travel in mm: 13.10

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 09,04,96 Edition Test oil : ISO 4113

Combination No. : 0 402 736 867

Injection pump

Pump designation : PES6P120A120RS7350 : 0 412 726 921

EP type number

Governor

: RQV400...1150PA1172K Governer design.

Governer no. : 0 421 815 438

Cust. part No. : 3928147

Customer-spec. information : CDC Customer Motor : 6BTA-A Power KW : 142.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

2.0 Inlet press. bar : : + 0.1 Tolerance bar

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

208.5 1.5 Tolerance bar

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 3.60 : + 0.05Tolerance mm Check tolerance mm : + - 0.10

12.50 Rack travel in mm : Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + 0.75

Start of delivery blocking

\*NW after s.o.d. : 5.75 : +- 0.50 Tolerance

Check

tolerance "NW : +- 0.75

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.35 Tolerance mm : +- 0.05

Del. quantity	+
cm3/1000 strokes : 167.5	+ rack travel mm : 13.00
Tolerance	+ Rated speed rpm : 1310 + Tolerance 1/min : +- 15
cm3/1000 strokes : +- 1.0	T Toterance Thirm : T 13
CHOT TOOD SET ONCS . T. T.O	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1475
cm3/1000s. : +- 4.0	+ Tolerance 1/min : +- 5
Company	+ nach turnal an 0.50
Spreed Tolerance	+ rack travel mm : 0.50 + Tolerance mm : + 0.50
cm3/1000 strokes : 8.0	Rated speed rpm : 1550
	+ 1350
Check tolerance	+
cm3/1000s. : 12.0	LOG TRUE
Del. quantity	+ LOW IDLE
cm3/1000 strokes : 13.0	I
Tolerance	+ control lever
cm3/1000 strokes : +- 3.0	+ position degree : 72.0
Check tolerance	tolerance degree : +- 6.0
cm3/1000s. : +- 5.0	† Tooting:
Spreed Tolerance	† Testing:
cm3/1000 strokes : 4.0	Rated speed rpm : 420
Check tolerance	+ rack travel mm : 6.50
cm3/1000s. : 8.0	+ Tolerance mm : + 0.20
	+ Rated speed rpm : 300
(B) SETTING OF INJECTION PUMP	T Rated speed (pill) . 500
WITH GOVERNOR	+ CRT mm min. :> 8.90
	+
	Rated speed rpm : 420
FULL LOAD DELIVERY AT FULL LOAD STOP	Ţ
TOTAL MOND OFFICE CONTROL CONT	+ TORQUE CONTROL
Rated speed rpm : 1150	+
Aneroid pressure	+ Rated speed rpm : 1150
hPa : 1200	+ rack travel mm : 14.35 + Tolerance mm : + 0.05
Del. quantity cm3/1000 strokes : 167.5	T Total article mail . +- 0.05
Tolerance	Rated speed rpm : 800
cm3/1000 strokes : + 1.0	rack travel mm : 12.90 Tolerance mm : + 0.20
Check tolerance	† Tolerance mm : + 0.20
cm3/1000s. : +- 4.0 Spreed	Rated speed rpm : 1250
Tolerance	rack travel mm : 14.20
cm3/1000 strokes : 8.0	Rated speed rpm : 1250 rack travel mm : 14.20 Tolerance mm : + 0.10
Check tolerance	+
cm3/1000s. : 12.0	ANEDOTO (AL TITUDE
	+ ANEROID/ALTITUDE + COMPENSATOR TEST
	T CONTENATOR TEO
CONTROL LEVER	+
	SETTING
control lever	Dated around The 1450
position degree : 118.0 tolerance degree : +- 6.0	+ Rated speed rpm : 1150 + Pressure hPa : 1200
toterance degree . The O.U	- 17 COSGITE III G . 1200
RATED SPEED	+ MEASUREMENT

L15

Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 1150 : 11.50 : + 0.20
Rated speed rpm	: 1150
Pressure hPa rack travel mm Tolerance mm	: 500 : 13.40 : ← 0.30
Pressure hPa rack travel mm Tolerance mm	: 375 : 12.30 : + 0.20
START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 100 : < 315
Check speed 1/min	: > 80
Check speed 1/min	: < 325
Aneroid pressure hPa Rated speed rpm Del. quantity	
Tolerance cm3/1000 strokes	
Check tolerance cm3/1000s. Spreed	: +- 6.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
Aneroid pressure hPa	: -
Rated speed rpm Del. quantity	: 1150
cm3/1000 strokes Tolerance	: 110.5
cm3/1000 strokes Chesk tolerance cm3/1000s.	: +- 2.0 : +- 4.0
BREAKAWAY	

Rated speed rpm : 1310
Tolerance 1/min : + 15

# STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s. : + 25.0

# LOW IDLE

Del. quantity cm3/1000 strokes : 13.0 Tolerance 3.0 cm3/1000 strokes : +-Check tolerance cm3/1000s. 5.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0 :

End of test specification sheet

Rack travel in mm: 13.00

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.04.96 Test oil : ISO 4113

Combination No. : 0 402 736 906

Injection pump

Pump designation : PES6P120A120RS7416

EP type number : 0 412 726 959

Governor

Governer design. : RQV400...1250PA1060

: -4K

Governer no.

: 0 421 815 514

Cust. part No. : 3928146

Customer-spec. information Customer : CDC : 6BTA-A Motor Power KW : 130.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

3.0 x inside diameter :

x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.30

Check

tolerance °NW : **←** 0.75

Start of delivery blocking

\*NW after s.o.d. : 6.25

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

: 1 Barrel no.

# BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 13.65 Tolerance mm : +- 0.05

	+ Rated speed rpm : 1690
Del. quantity cm3/1000 strokes : 160.5	+ guide sleeve + travel mm : 11.50 + Tolerance mm : + 0.50
Tolerance cm3/1000 strokes : +- 1.0	
Oh a chart a harmon and	+ GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 1390
Spreed	Rack travel in mm: 12.60
Tolerance	+
cm3/1000 strokes : 8.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000s. : 12.0	Rated speed rpm : 1250
(1.0	+ Aneroid pressure
Rated speed rpm : 420	hPa : 1200
Rack travel in mm : 6.00	+ Del. quantity + cm3/1000 strokes : 160.5
Tolerance mm : +- 0.20	Tolerance
Del. quantity	+ cm3/1000 strokes : + 1.0
cm3/1000 strokes : 15.0	+ Check tolerance
Tolerance	+  cm3/1000s. : + 4.0
cm3/1000 strokes : +- 3.0	-L Spreed 
Check tolerance cm3/1000s. : +- 5.0	+ cm3/1000 strokes : 8.0
Spreed	- Check tolerance
Tolerance	- cm3/1000s. : 12.0
cm3/1000 strokes : 4.0	+
Check tolerance cm3/1000s. : 8.0	†
cm3/1000s. : 8.0	CONTROL LEVER
(B) SETTING OF INJECTION PUMP	t control lever
WITH GOVERNOR	position degree : 117.0
	tolerance degree : + 4.0
OUT OF OUR TOAKE	TATES OFFER
GUIDE SLEEVE TRAVEL	+ RATED SPEED
Rated speed rpm : 400	rack travel mm : 12.60
guide sleeve	+ Rated speed rpm : 1325
travel mm : 1.44 Tolerance mm : + 0.20	Tolerance 1/min : +- 15
Total differential . F. 5.20	rack travel mm : 4.00
Rated speed rpm : 1329	+ Rated speed rpm : 1475
guide sleeve	Tolerance 1/min : + 5
travel mm : 7.83	+
Tolerance mm : $\leftarrow$ 0.15	+ rack travel mm : 0.50 + Tolerance mm : + 0.50
Rated speed rpm : 939	+ Rated speed rpm : 1550
guide sleeve	Traces opens i più i 1990
travel mm : 5.18	+
Tolerance mm : + 0.25	101.70.5
Dated aread non 4 440	+ LOW IDLE
Rated speed rpm : 640 guide sleeve	I
travel mm : 3.56	T control lever
Tolerance mm : +- 0.25	position degree : 71.0
	tolerance degree : + 4.0

Rated speed rpm rack travel mm Tolerance mm	: 420 : 6.00 : + 0.10
Rated speed rpm	: 300
CRT mm min.	: > 5.80
Rated speed rpm	: 425
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1250 : 13.65 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 800 : 11.85 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 11.60 : ← 0.20
ANEROID/ALTITUDE	
COMPENSATOR TEST	
SETTING Rated speed rpm	: 1250 : 1200
SETTING Rated speed rpm Pressure hPa	: 1250 : 1200
COMPENSATOR TEST  SETTING  Rated speed rpm Pressure hPa  MEASUREMENT  Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 1250 : 1200 : - : 1250 : 10.60 : +- 0.20
SETTING Rated speed rpm Pressure hPa MEASUREMENT Pressure hPa Rated speed rpm rack travel mm	: 1200 : – : 1250 : 10.60
SETTING Rated speed rpm Pressure hPa MEASUREMENT Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 1200 : - : 1250 : 10.60 : +- 0.20

100 280

Check speed 1/min Check speed 1/min	: > 80 : < 290
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 1250 : 111.5 : + 1.0 : + 4.0
Rack travel in mm Rated speed rpm Tolerance 1/min	: 12.60 : 1325 : +- 15
STARTING FUEL DEL Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 14.10 : + 0.50 : 155.0
LOW IDLE	

Rated speed rpm : > Rated speed rpm : <

Rated speed rpm	:		420
rack travel mm	:		6.00
Tolerance mm	:	+-	0.20
Del. quantity			
cm3/1000 strokes	:		15.0
Tolerance			
cm3/1000 strokes	:	+-	3.0
Check tolerance			
cm3/1000s.	:	+-	5.0
Spreed			
Tolerance			
cm3/1000 strokes	:		4.0
Check tolerance			
cm3/1000s.	:		8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.04.96 : ISO 4113

Combination No. : 0 402 746 611

Injection pump

Pump designation : PES6P120A320RS7372

EP type number

: 0 412 726 940

Governor

Governer design.

: RQV250...1400PA1279K

Governer no.

: 0 421 815 508

Cust. part No. : 3866783

Customer-spec. information

Customer

: CDC

Motor

: 6BTA

Power KW

: 235.0

# TEST BENCH REQUIREMENTS

Inlet line

: 3.2

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve : 2 417 413 086

Inlet press. bar :

2.0

Tolerance bar

0.1

Test nozzle holde

assembly

: 1 688 901 103

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

L21

x inside diameter : 3.0

x length mm :

600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm 4.00 : + 0.05Tolerance mm

Check

tolerance mm : <del>←</del> 0.10

Rack travel in mm: 10.50 : + 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

: + - 0.30Tolerance

Check

: + 0.75tolerance 'NW

Start of delivery blocking

\*NW after s.o.d. : 11.00 Tolerance : + - 0.50

Check

tolerance °NW : +- 0.75

Barrel no.

: 1

# BASIC SETTING

Rated speed rpm

1400

Rack travel in mm: 13.85

Tolerance mm

: +- 0.05

Del. quantity		1
cm3/1000 strokes	: 198.5	Ţ
Tolerance	Alle Carlo Till Carlo Ca	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes	: <b>←</b> 1.0	Rated speed rpm : 1400
Check tolerance		+ Aneroid pressure + hPa : 1200
cm3/1000s.	: +- 4.0	Del. quantity
On an and		+ cm3/1000 strokes : 198.5
Spreed Tolerance		+ Tolerance + cm3/1000 strokes : +- 1.0
cm3/1000 strokes	: 5.0	+ Check tolerance
Check tolerance		+ cm3/1000s. : +- 4.0 + Spreed
cm3/1000S.	: 9.0	+ Tolerance
		+ cm3/1000 strokes : 5.0
Del. quantity cm3/1000 strokes	: 34.0	+ Check tolerance + cm3/1000s. : 9.0
Tolerance		+
cm3/1000 strokes	: +- 3.0	+
Check tolerance cm3/1000s.	: +- 5.0	CONTROL LEVER
Spreed		+
Tolerance cm3/1000 strokes	: 8.0	+ control lever + position degree : 118.5
Check tolerance		tolerance degree : + 4.0
cm3/1000s.	: 12.0	TATES CORES
		+ RATED SPEED
(B) SETTING OF IN	JECTION PUMP	rack travel mm : 12.80
WITH GOVERNOR		+ Rated speed rpm : 1450 + Tolerance 1/min : + 5
		+
GUIDE SLEEVE TRAV	EL	+ rack travel mm : 6.00 + Rated speed rpm : 1585
Rated speed rpm	: 275	Tolerance 1/min : + 15
guide sleeve	4.70	†
travel mm Tolerance mm	: 1.39 : +- 0.20	+ rack travel mm : 0.50 + Tolerance mm : + 0.50
		Rated speed rpm : 1700
Rated speed rpm guide sleeve	: 1455	†
travel mm	: 9.16	
Tolerance mm	: + 0.15	LOW IDLE
Rated speed rpm	: 931	‡
guide sleeve		control Lever
travel mm Tolerance mm	: 5.67 : +- 0.25	<pre>position degree : 74.5 tolerance degree : +- 4.0</pre>
TOTEL GIFCE HAIT		+
Rated speed rpm	: 480	Testing:
guide sleeve travel mm	: 3.18	Rated speed rpm : 275
Tolerance mm	: + 0.25	rack travel mm : 7.30
Rated speed rpm	: 1860	Tolerance mm : +- 0.20
guide sleeve		Rated speed rpm : 200
travel mm	: 13.50 : +- 0.50	+ CRT mm min. :> 8.80
Tolerance mm	0.30	+ CRT mm min. :> 8.80
		•

Rated speed rpm	: 350	Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 188.5
TORQUE CONTROL		+ Tolerance
Rated speed rpm rack travel mm Tolerance mm	: 13.85	cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 13.60 : + 0.10	Tolerance cm3/1000 strokes : 8.0 check tolerance cm3/1000s. : 12.0
Rated speed rpm rack travel mm Tolerance mm	: 13.15	Aneroid pressure hPa : - Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 110.0
ANEROID/ALTITUDE COMPENSATOR TEST		Tolerance cm3/1000 strokes : +- 1.0 check tolerance cm3/1000s. : +- 3.0
SETTING		
Rated speed rpm Pressure hPa	: 1400 : 1200	BREAKAWAY
MEASUREMENT		Rack travel in mm: 12.80
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 1400 : 10.30 : + 0.20	Rated speed rpm : 1450 Tolerance 1/min : +- 5
Rated speed rpm		+ STARTING FUEL DELIVERY
Pressure hPa rack travel mm Tolerance mm	: 620 : 12.70 : + 0.20	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50 Del. quantity
Pressure hPa rack travel mm Tolerance mm	: 280 : 11.20 : + 0.20	+ cm3/1000 strokes : 175.0 + Tolerance - cm3/1000 strokes : + 20.0 + Check tolerance - cm3/1000s. : + 25.0
START CUT-OUT		+
Rated speed rpm Rated speed rpm		LOW IDLE
Check speci 1/min Check	: > 80	Del. quantity cm3/1000 strokes : 34.0 Tolerance
speed 1/min	: < 210	cm3/1000 strokes : + 3.0 Check tolerance
FUEL DELIVERY CHA	RACTERISTICS	
Aneroid pressure hPa	: 1200	cm3/1000 strokes : 8.0

L23

cm3/1000s.	:	12.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 04.08.95 : ISO 4113

Combination No. : 0 402 746 648

Injection pump

Pump designation : PES6P12DA32DRS7363 EP type number : 0 412 726 931

Governor

Governer design. : RQV325...1000PA1203

: -1K

Governer no.

: 0 421 815 46

Cust. part No. : 313GC5216-P2

Customer-spec. information Customer : MACK Motor : EM5260 : 195.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 3.0 Tolerance bar : +- 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

208.5 bar Tolerance bar 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

: + - 0.75tolerance "NW

Start of delivery blocking

Tolerance : + - 0.50

Check

: ← 0.75 tolerance 'NW

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

12.80 Rack travel in mm : : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 254.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 4.0

Spreed

Tolerance cm3/1000 strokes	· 5 በ	<u> </u>	
		FULL LOAD DELIVER	Y AT FULL LOAD STOP
Check tolerance cm3/1000s.	: 9.0	Rated speed rpm Aneroid pressure	: 1000
Del. quantity cm3/1000 strokes	: 43.5	+ hPa + Del. quantity	: 1200
Tolerance cm3/1000 strokes	: +- 3.0	tolerance	
Check tolerance cm3/1000s. Spreed	: <del></del> 5.0	+ cm3/1000 strokes + Check tolerance + cm3/1000s.	: + 1.0 : + 4.0
Tolerance cm3/1000 strokes	: 8.0	Spreed Tolerance	. 4.0
Check tolerance cm3/1000s.	: 12.0	cm3/1000 strokes Check tolerance	
		+ cm3/1000s.	: 9.0
(B) SETTING OF IN WITH GOVERNOR	UECTION PUMP		
		+ CONTROL LEVER	
GUIDE SLEEVE TRAV	EL 325	control lever position degree tolerance degree	: 115.0 : + 6.0
guide sleeve travel mm	: 1.53	RATED SPEED	
Tolerance mm	: + 0.25	rack travel mm	: 11.80
Rated speed rpm guide sleeve		Rated speed rpm Tolerance 1/min	: 1050
travel mm Tolerance mm	: 9.06 : + 0.25	rack travel mm Rated speed rpm	: 4.00 : 1200
Rated speed rpm guide sleeve	: 898	Tolerance 1/min	
travel mm Tolerance mm	: 7.74 : +- 0.25	rack travel mm Tolerance mm	: 0.50 : +- 0.50
Rated speed rpm	: 371	Rated speed rpm	: 1275
guide sleeve travel mm	: 2.23	<u> </u>	
Tolerance mm	: + 0.25	+ LOW IDLE	
Rated speed rpm guide sleeve	: 421	control lever	
travel mm Tolerance mm	: 2.85 : + 0.25	position degree tolerance degree	
Rated speed rpm guide sleeve	: 610	Testing:	
travel mm Tolerance mm	: 4.40 : +- 0.25	Rated speed rpm rack cravel mm	: 325 : 4.50
Rated speed rpm	: 1440	Tolerance mm	: +- 0.10
guide sleeve travel mm	: 13.50 : + 0.25	Rated speed rpm CRT mm min.	: 275 : > 5.50
Tolerance mm	. +- 0.23	T (7) (10) (11) (1)	3.30

Rated speed rpm	: 425	<u> </u>
TORQUE CONTROL		FUEL DELIVERY CHARACTERISTICS
TORGUE CONTROL		Aneroid pressure
Rated speed rpm	: 1000	hPa : 1200
rack travel mm		Rated speed rpm : 575
Tolerance mm		Del. quantity
LOCEL WILLE WILL	0.05	cm3/1000 strokes : 296.5
Rated speed rpm	: 575	Tolerance
rack travel mm		+ cm3/1000 strokes : +- 3.0
Tolerance mm	: +- 0.10	Check tolerance
TOCCE CHIECE THAT		+ cm3/1000s. : +- 6.0
Rated speed rpm	. 800	Spreed
rack travel mm		+ Tolerance
Tolerance mm		+ cm3/1000 strokes : 8.0
TOCCI GITCC TAIL		Check tolerance
Rated speed rpm	: 450	- cm3/1000s. : 12.0
rack travel mm		
Tolerance mm	: +- 0.40	Aneroid pressure
TOTE OF THE	0.40	hPa : -
		Rated speed rpm : 800
ANEROID/ALTITUDE		Del. quantity
COMPENSATOR TEST		- cm3/1000 strokes : 154.5
COM LIVER TON TEST		+ Tolerance
		cm3/1000 strokes : +- 2.0
SETTING		Check tolerance
OF ! I TIAG		cm3/1000s. : +- 4.0
Rated speed rpm	: 800	1 4.0
Pressure hPa		
rressare ma	, ,,,,,,,	→ BREAKAWAY
MEASUREMENT		
TEMOORE IEM		1
Pressure hPa	<u>.</u> –	Rack travel in mm: 11.80
Rated speed rpm	: 800	+ Rated speed rpm : 1050
rack travel mm	: 8.50	+ Tolerance 1/min : + 5
Tolerance mm	: + 0.20	
10tti allot iikii	0.20	1
Rated speed rpm	: 800	
		+ STARTING FUEL DELIVERY
Pressure hPa	: 755	+
rack travel mm	: 12.40	+   Rated speed rpm   :   100
Tolerance mm	: +- 0.20	+ rack travel mm : 11.20
		+ Tolerance mm : + 1.00
Pressure hPa	: 405	+ Del. quantity
rack travel mm	: 9.80	+ cm3/1000 strokes : 194.0
Tolerance mm	: +- 0.05 <sub>4</sub>	† Tolerance
	***	+ cm3/1000 strokes : +- 20.0
	<del> </del>	
START CUT-OUT		+ cm3/1000s. : +- 30.0
		+
Rated speed rpm	: > 100	+
Rated speed rpm		+
, , , ,		
Check		+ LOW IDLE
speed 1/min	: > 80	+
Check		† Del. quantity
speed 1/min	: < 255	+ cm3/1000 strokes : 43.5
•		+ Tolerance
		+ cm3/1000 strokes : +- 3.0
		•

Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.04.96 Test oil : ISO 4113

Combination No. : 0 402 616 806

Injection pump

Pump designation : PE6P12OA3OOLS7888 EP type number : 0 412 626 947

Governor

Governer design. : Governer no. :

Cust. part No. : 04221425KZ0165-17

Customer-spec. information

Customer : KHD

Motor : BF6M1015C Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp.  $^{\circ}$ C :

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.05 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-6-3-5-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.70 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 350.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

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Spreed Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 9.0
Rated speed rpm	: 300
Rack travel in mm Tolerance mm Del. quantity	: 4.70 : +- 0.20
cm3/1000 strokes Tolerance	: 25.0
cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000s. Spreed	: +- 6.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
(B) SETTING OF INJ	ECTION PUMP

FIRE	LOAD	DEI	TUFRY	ΔΥ	FILE	LOAD	STOP

Rated speed rpm Aneroid pressure	:	950
hPa Del. quantity	:	-
cm3/1000 strokes	:	350.0
cm3/1000 strokes	: +-	1.0
Check tolerance cm3/1000s. Spreed	: +-	4.0
Tolerance cm3/1000 strokes Check tolerance	:	6.0
cm3/1000s.	:	9.0

# TORQUE CONTROL

Rated speed rpm	:	950
rack travel mm	:	13.70
Tolerance mm	: +	- 0.05

STARTING	FUEL	DEL	IVERY
----------	------	-----	-------

Rated speed rpm	: 100
rack travel mm	: 21.00
Del. quantity	
	: 200.0
Tolerance	
cm3/1000 strokes	: +- 20.0
Check tolerance	
cm3/1000s.	: <del></del> 24.0

# LOW IDLE

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 09.04.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 646 744

Injection pump

Pump designation : PE6P12OA32OLS7872

: 0 412 626 912 EP type number

Governor

Governer design. : RQV300...1050PA1259

Governer no. : 0 421 814 169

Cust. part No. : 04221532 KY 0165-17

Customer-spec. information

Customer : KHD : BF6M1015C Motor

Power KW : 270.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40

: +-Tolerance °C 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

: +- 0.1 Tolerance bar

Overflow quantity

: 195 min. L/h

Tolerance L/h : +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 4.05 : +- 0.05

Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

: +- 1.50 Tolerance mm

: 1-6-3-5-2-Firing order

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

tolerance \*NW : +- 0.50

Start of delivery mark

Barrel no.

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 13.20

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 328.0

Talananaa		1
Tolerance cm3/1000 strokes	: <del></del> 1.0	Rated speed rpm : 1230
Check tolerance		† guide sleeve + travel mm : 13.50
cm3/1000s.	: +- 4.0	Tolerance mm : +- 0.50
Spreed		
Tolerance		GUIDE SLEEVE POSITION
cm3/1000 strokes	: 6.0	Poted aread may 1170
Check tolerance		Rated speed rpm : 1130
cm3/1000s.	: 9.0	Rack travel in mm : 12.70
Data dana dan	. 700	† Tolerance mm : +- 1.30
Rated speed rpm	: 300	
Rack travel in mo	n: 4.60	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm		+
Del. quantity		+ Rated speed rpm : 1050
cm3/1000 strokes	: 23.0	+ Aneroid pressure + hPa : 1700
Tolerance cm3/1000 strokes	30	+ hPa : 1700 + Del. quantity
Check tolerance		- cm3/1000 strokes : 328.0
cm3/1000s.	: +- 6.0	+ Tolerance
Spreed		+ cm3/1000 strokes : +- 1.0
Tolerance	0.0	+ Check tolerance
cm3/1000 strokes Check tolerance	: 8.0	+ cm3/1000s. : +- 4.0 + Spreed
cm3/1000s.	: 12.0	Tolerance
	, ,2.0	+ cm3/1000 strokes : 6.0
		→ Check tolerance
		1
(B) SETTING OF IN	NECTION PUMP	+ cm3/1000s. : 9.0
(B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP	cm3/1000s. : 9.0
	NJECTION PUMP	cm3/1000s. : 9.0
		cm3/1000s. : 9.0  CONTROL LEVER
GUIDE SLEEVE TRAV	/EL	CONTROL LEVER
WITH GOVERNOR	/EL : 300	
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm	/EL : 300 : 1.24	CONTROL LEVER control lever
GUIDE SLEEVE TRAV	/EL : 300	control lever position degree : 122.0 tolerance degree : +- 4.0
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.24 : + 0.20	CONTROL LEVER  control lever position degree : 122.0
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	/EL : 300 : 1.24	CONTROL LEVER  control lever position degree : 122.0 tolerance degree : +- 4.0  RATED SPEED
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.24 : + 0.20	control lever position degree : 122.0 tolerance degree : +- 4.0
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	/EL : 300 : 1.24 : ← 0.20 : 1098	CONTROL LEVER  control lever position degree : 122.0 tolerance degree : +- 4.0  RATED SPEED  rack travel mm : 12.20
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	/EL : 300 : 1.24 : ← 0.20 : 1098 : 10.02	control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : + 5  rack travel mm : 4.00
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	/EL : 300 : 1.24 : ← 0.20 : 1098 : 10.02 : ← 0.15 : 860	control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1125
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.24 : ← 0.20 : 1098 : 10.02 : ← 0.15 : 860 : 5.59	control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : + 5  rack travel mm : 4.00
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	/EL : 300 : 1.24 : ← 0.20 : 1098 : 10.02 : ← 0.15 : 860	CONTROL LEVER  control lever position degree : 122.0 tolerance degree : +- 4.0  RATED SPEED  rack travel mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : +- 5  rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : +- 15
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	EL : 300 : 1.24 : ← 0.20 : 1098 : 10.02 : ← 0.15 : 860 : 5.59 : ← 0.25	control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : + 15  rack travel mm : 0.50
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.24 : ← 0.20 : 1098 : 10.02 : ← 0.15 : 860 : 5.59	CONTROL LEVER  control lever position degree : 122.0 tolerance degree : +- 4.0  RATED SPEED  rack travel mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : +- 5  rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : +- 15
GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	### ### #### ########################	CONTROL LEVER  control lever position degree : 122.0 tolerance degree : +- 4.0  RATED SPEED  rack travel mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : +- 5  rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : +- 15  rack travel mm : 0.50 Tolerance mm : +- 0.50
GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	### 1.24  1.24  1.24  1.29  1098  10.02  10.02  10.05  860  5.59  10.025  10.05  10.05	CONTROL LEVER  control lever position degree : 122.0 tolerance degree : +- 4.0  RATED SPEED  rack travel mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : +- 5  rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : +- 15  rack travel mm : 0.50 Tolerance mm : +- 0.50
GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	EL : 300 : 1.24 : ← 0.20 : 1098 : 10.02 : ← 0.15 : 860 : 5.59 : ← 0.25 : 560 : 3.24 : ← 0.25	CONTROL LEVER  control lever position degree : 122.0 tolerance degree : +- 4.0  RATED SPEED  rack travel mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : +- 5  rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : +- 15  rack travel mm : 0.50 Tolerance mm : +- 0.50
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	### (FL : 300	CONTROL LEVER  control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1280
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	EL : 300 : 1.24 : ← 0.20 : 1098 : 10.02 : ← 0.15 : 860 : 5.59 : ← 0.25 : 560 : 3.24 : ← 0.25	CONTROL LEVER  control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1280

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control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min. Rated speed rpm	: +- 4.0 : 300 : 4.60 : +- 0.10 : 200 : > 6.10	Rated speed rpm : 400  Del. quantity cm3/1000 strokes : 230.0  Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0  BREAKAWAY  Rack travel in mm : 12.20 Rated speed rpm : 1085 Tolerance 1/min : +- 5
TORQUE CONTROL		STARTING FUEL DELIVERY
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 13.20 : + 0.05	Rated speed rpm : 100 rack travel mm : 8.30 Tolerance mm : +- 0.30 pel. quantity cm3/1000 strokes : 135.0
ANEROID/ALTITUDE COMPENSATOR TEST		Tolerance + cm3/1000 strokes : +- 20.0 + Check tolerance + cm3/1000s. : +- 24.0
SETTING		T (1115) 10003
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1700 : 13.20	LOW IDLE  Rated speed rpm : 300  rack travel mm : 4.60
MEASUREMENT Pressure hPa		+ rack travel mm : 4.60 + Tolerance mm : + 0.20 + Del. quantity
Rated speed rpm rack travel mm Tolerance mm	: - : 400 : 8.30 : +- 0.20	cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : + 3.0
Rated speed rpm	: 400	+ Check tolerance + cm3/1000s. : + 6.0 + Spreed
Pressure hPa rack travel mm Tolerance mm	: 450 : 9.20 : +- 0.10	Tolerance cm3/1000 strokes : 8.0 Check tolerance
Pressure hPa rack travel mm Tolerance mm	: 1000 : 12.00 : ← 0.05	- cm3/1000s. : 12.0
FUEL DELIVERY CHAI	RACTERISTICS	<del>}</del>
Aneroid pressure		‡

M05

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.04.96 Test oil : ISO 4113

Combination No. : 0 402 646 746

Injection pump

Pump designation : PE6P12OA32OLS7872 EP type number : 0 412 626 912

Governor

Governer design. : RQV300...950PA1238 Governer no. : 0 421 814 156

Cust. part No. : 04222809KY0165-17

Customer-spec. information

Customer : KHD

Motor : BF6M1015C Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.05 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-6-3-5-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.20 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 358.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

M07

	+	
Spreed Tolerance cm3/1000 strokes	: 6.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000S.	9.0	Rated speed rpm : 900 Aneroid pressure hPa : 1700
Rated speed rpm	: 9.0	hPa : 1700 Del. quantity cm3/1000 strokes : 358.0
Rack travel in mm	5.00	Tolerance cm3/1000 strokes : +- 1.0
Tolerance mm Del. quantity	: +- 0.20	Check tolerance cm3/1000s. : +- 4.0
cm3/1000 strokes Tolerance cm3/1000 strokes	+	Spreed Tolerance cm3/1000 strokes : 6.0
Check tolerance cm3/1000s.	: + 6.0	Check tolerance cm3/1000s. : 9.0
Spreed Tolerance	+	
cm3/1000 strokes Check tolerance cm3/1000s.	: 8.0	CONTROL LEVER
(B) SETTING OF INWITH GOVERNOR	‡	control lever position degree : 123.0 tolerance degree : +- 4.0
GUIDE SLEEVE TRAV		RATED SPEED rack travel mm : 13.20
Rated speed rpm	: 300	Rated speed rpm : 980 Tolerance 1/min : +- 5
guide sleeve travel mm Tolerance mm	: 1.13 : + 0.20	rack travel mm : 4.00 Rated speed rpm : 1055 Tolerance 1/min : +- 15
Rated speed rpm guide sleeve	: 994	Tolerance 1/min : +- 15  rack travel mm : 0.50
travel mm Tolerance mm	: 10.08 : + 0.15	Tolerance mm : + 0.50 Rated speed rpm : 1200
Rated speed rpm guide sleeve	: 700	
travel mm Tolerance mm	: 5.10 : +- 0.25	LOW IDLE
Rated speed rpm guide sleeve	: 1160	control lever position degree : 77.0
travel mm Tolerance mm	: 13.50 : +- 0.50	tolerance degree : + 4.0
		Testing:
GUIDE SLEEVE POSIT	: 1035	Rated speed rpm : 300 rack travel mm : 5.00 Tolerance mm : +- 0.10
Rack travel in mm	: 13.20	Rated speed rpm : 200
Tolerance mm	: +- 1.30	CRT mm min. : > 6.70
	#	

Rated speed rpm	: 370	t Check tolerance cm3/1000s. : + 4.0 spreed
TORQUE CONTROL		Tolerance
		+ cm3/1000 strokes : 8.0
Rated speed rpm	: 900 : 14.20	+ Check tolerance
rack travel mm Tolerance mm		+ cm3/1000s. : 12.0
ANEDATA (AL TITUDE		BREAKAWAY
ANEROID/ALTITUDE COMPENSATOR TEST		Ţ
		Rack travel in mm: 13.20
000000		Rated speed rpm : 980
SETTING		† Tolerance 1/min : +- 5
Rated speed rpm	: 400	· • •
Pressure hPa	: 1700	
rack travel mm		STARTING FUEL DELIVERY
Tolerance mm	0.05	Rated speed rpm : 100
MEASUREMENT		rack travel mm : 8.90
		+ Del. quantity
Pressure hPa		+ cm3/1000 strokes : 230.0
Rated speed rpm rack travel mm		+ Tolerance + cm3/1000 strokes : +- 20.0
Tolerance mm		Check tolerance
Occi di loc linii		+ cm3/1000s. : + 24.0
Rated speed rpm	: 400	+
ressure hPa	; 385	İ
rack travel mm	: 9.70	
Tolerance mm	: + 0.20	LOW IDLE
	4000	700
Pressure hPa rack travel mm		+ Rated speed rpm : 300 + rack travel mm : 5.00
Tolerance mm		Tolerance mm : +- 0.20
		+ Del. quantity
		— + cm3/1000 strokes : 23.0
START CUT-OUT		+ Tolerance + cm3/1000 strokes : +- 3.0
Rated speed rpm	: > 100	+ Check tolerance
Rated speed rpm		+ cm3/1000s. : +- 6.0
		Spreed
Check	. > 00	+ Tolerance
peed 1/min Theck	: > 80	+ cm3/1000 strokes : 8.0 + Check tolerance
speed 1/min	: < 240	+ cm3/1000s. : 12.0
•		+
UEL DELIVERY CHA	ARACTERISTICS	
Aneroid pressure		Ţ <u></u>
ıPa İ	: -	+
Rated speed rpm	: 400	End of test specification sheet
el. quantity	. 270.0	†
m3/1000 strokes Tolerance	: 230.0	İ
m3/1000 strokes	: +- 1.0	Ţ
mer rood derones		1

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 04.04.96 Edition Test oil : ISO 4113

Combination No. : 0 402 646 909

Injection pump

Pump designation : PE6P12OA32ORS7138

: -10Z

: 0 412 626 923 EP type number

Governor

Governer design. : RQV200...1100PA712

: -5

: 0 421 813 951 Governer no.

Cust. part No. : 1318819

Customer-spec. information Customer : SCANIA : DSC907 Motor

# TEST BENCH REQUIREMENTS

: 3.1 Inlet line

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 : +--Tolerance bar 0.1

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

251.5 bar Tolerance bar

M10

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 600 x length mm :

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm 4.45 : + 0.05Tolerance mm Check

tolerance mm : + - 0.10

Rack travel in mm: 10.50 : + 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

: +- 0.50Tolerance

Check

: + - 0.75tolerance °NW

1 Barrel no.

# BASIC SETTING

Rated speed rpm 700

Rack travel in mm : 12.15

: +- 0.05 Tolerance mm

+	Tolerance
Del. quantity	cm3/1000 strokes : 8.0
cm3/1000 strokes : 159.0	Check tolerance cm3/1000s. : 12.0
Tolerance	(11137 14003: 12.0
cm3/1000 strokes : + 1.0 +	
	ACCURACY A PLANT
Check tolerance + 4.0 +	CONTROL LEVER
CIID/10003 4.0	control lever
Spreed	position degree : 60.0
Tolerance + cm3/1000 strokes : 8.0 +	tolerance degree : +- 4.0
CIID/ 1000 SCIORES . B.O	control lever
Check tolerance	position degree : 120.0
cm3/1000s. : 12.0 +	tolerance degree : +- 4.0
Rated speed rpm : 250	RATED SPEED
Hated speed (pill)	WALES OF EED
Rack travel in mm: 5.00	rack travel mm : 11.15
Tolerance mm : + 0.30	Rated speed rpm : 1145 Tolerance 1/min : +- 5
Del. quantity + cm3/1000 strokes : 16.0 +	Toterance Thirm : +- 5
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : +- 3.0 +	Rated speed rpm : 1285
Check tolerance + 6.0 +	Tolerance 1/min : +- 15
Spreed	rack travel mm : 0.50
Tolerance	Tolerance mm : +- 0.50
cm3/1000 strokes : 4.0	Rated speed rpm : 1400
Check tolerance + cm3/1000s. : 8.0 +	
-	
<u> </u>	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
WITH GOVERNOR	control lever
+	position degree : 64.0
CUIDE SI EEVE DOSTITON	tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	control lever
Rated speed rpm : 1130	position degree : 9.0
†	tolerance degree : +- 4.0
Rack travel in mm : 16.50 + Tolerance mm : +- 1.30 +	Testing:
Total differ field	reserving.
	Rated speed rpm : 250
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 5.00 Tolerance mm : +- 0.10
Rated speed rpm : 700	Toterance min : +- U.Tu
Aneroid pressure	Rated speed rpm : 150
hPa : 1500	CDTi- / FO
Del. quantity + cm3/1000 strokes : 159.0 +	CRT mm min. : > 6.50
Tolerance +	Rated speed rpm : 250
cm3/1000 strokes : + 1.0 +	
Check tolerance	TORQUE CONTROL
cm3/1000s. : +- 4.0 +	TORGOE CONTROL
+	Rated speed rpm : 700

rack travel mm Tolerance mm	: 12.15 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.15 : + 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.30 : + 0.20
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 220 : 10.75 : ← 0.15
Pressure hPa rack travel mm Tolerance mm	: 350 : 11.55 : + 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1500 : 1100 : 150.0
Tolerance cm3/1000 strokes Check tolerance	: +- 4.0
cm3/1000s.	: <del>+-</del> 6.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: - : 500 : 116.0
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 4.0

# BREAKAWAY Rack travel in mm : 11.15 Rated speed rpm : 1145 Tolerance 1/min : +- 5 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 10.30 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 130.0 Tolerance cm3/1000 strokes : +- 20.0Check tolerance cm3/1000s. : +- 24.0 LOW IDLE Rated speed rpm : 250 rack travel mm : 5.00 : +- 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance

End of test specification sheet

8.0

cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 09.04.96 : ISO 4113

Combination No. : 0 402 648 789

Injection pump

Pump designation : PE8P120A320LS7873 EP type number : 0 412 628 880

Governor

Governer design. : RQV300...1050PA1259

Governer no. : 0 421 814 169

Cust. part No. : 04222488KY0165-17

Customer-spec. information

Customer : KHD

Motor

: BF8M1015/C

Power KW : 400.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar :

Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar : +- 1.5 Tolerance bar

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.05 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Fining order : 1-8-7-2-6 :-5-4-3

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

: 1 Barrel no.

# BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.00

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 340.0

M13

cm3/1000 strokes	: +- 1.0	+ Rated speed rpm : 1230
Check tolerance cm3/1000S.	: +- 4.0	guide sleeve + travel mm : 13.50 + Tolerance mm : + 0.50
	4.0	Toterance mm : +- 0.50
Spreed Tolerance cm3/1000 strokes	. 6 N	GUIDE SLEEVE POSITION
Check tolerance		Rated speed rpm : 1118
cm3/1000s.	: 9.0	Rack travel in mm : 13.00 Tolerance mm : +- 1.30
Rated speed rpm	: 300 -	
Rack travel in m Tolerance mm	m: 6.00 - :+- 0.20 -	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes	: 23.0	Rated speed rpm : 1050 Aneroid pressure
Tolerance cm3/1000 strokes	; <del>-</del> 3.0	hPa : 1700 Del. quantity
Check tolerance cm3/1000s.	: +- 6.0	cm3/1000 strokes : 340.0 Tolerance
Spreed Tolerance		cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes Check tolerance	: 8.0	cm3/1000s. : +- 4.0 
cm3/1000s.	: 12.0	Tolerance cm3/1000 strokes : 6.0
(B) SETTING OF I	NJECTION PUMP -	Check tolerance cm3/1000s. : 9.0
GUIDE SLEEVE TRA		CONTROL LEVER
Rated speed rpm	. 700	<del>f</del>
aurae steeve	: 300	control lever position degree : 122.0
guide sleeve travel mm Tolerance mm	: 1.24	position degree : 122.0 tolerance degree : +- 4.0
travel mm	: 1.24 : + 0.20	position degree : 122.0 tolerance degree : +- 4.0 RATED SPEED
travel mm Tolerance mm	: 1.24 : + 0.20	position degree : 122.0 tolerance degree : +- 4.0
travel mm Tolerance mm Rated speed rpm guide sleeve	: 1.24 : +- 0.20 : 1103	position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.00
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 1.24 : + 0.20 : 1103 : 10.19 : + 0.15 : 860	position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.00 Rated speed rpm : 1090
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	: 1.24 : + 0.20 : 1103 : 10.19 : + 0.15	position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.00 Rated speed rpm : 1090 Tolerance 1/min : + 5  rack travel mm : 4.00
travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm Rated speed rpm	: 1.24 : + 0.20 : 1103 : 10.19 : + 0.15 : 860 : 5.59	position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.00 Rated speed rpm : 1090 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1135 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 1.24 : + 0.20 : 1103 : 10.19 : + 0.15 : 860 : 5.59 : + 0.25	position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.00 Rated speed rpm : 1090 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1135 Tolerance 1/min : + 15  rack travel mm : 0.50
travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 1.24 : + 0.20 : 1103 : 10.19 : + 0.15 : 860 : 5.59 : + 0.25 : 560 : 3.24 : + 0.25	position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.00 Rated speed rpm : 1090 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1135 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	: 1.24 : + 0.20 : 1103 : 10.19 : + 0.15 : 860 : 5.59 : + 0.25 : 560 : 3.24 : + 0.25	position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.00 Rated speed rpm : 1090 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1135 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1290

		l Dated aread pro . (00
control lever		+ Rated speed rpm : 400 + Del. quantity
position degree	: 78.0	+ cm3/1000 strokes : 250.0
tolerance degree		+ Tolerance
Tanking		cm3/1000 strokes : + 1.0 + Check tolerance
Testing:		+ cm3/1000s. : +- 4.0
Rated speed rpm	: 300	
rack travel mm		
Tolerance mm	: + 0.10	# BREAKAWAY
Rated speed rpm	: 200	+
	. 7.00	+ Rack travel in mm: 13.00
CRT mm max.	: > 7.00	Rated speed rpm : 1090 Tolerance 1/min : +- 5
Rated speed rpm	: 345	+ Total ance Trimiti
, ,		+
TORQUE CONTROL		STARTING FUEL DELIVERY
		+
Rated speed rpm	: 1050	+ Rated speed rpm : 100
rack travel mm Tolerance mm	: 14.00	+ rack travel mm : 21.00 + Tolerance mm : +- 0.30
TO CET OF THE	0.05	+ Del. quantity
ANEROID/ALTITUDE		+ Tolerance
COMPENSATOR TEST		cm3/1000 strokes : + 20.0 Check tolerance
		cm3/1000s. : +- 24.0
SETTING		+
Dated aread man	: 400	†
Rated speed rpm Pressure hPa		
rack travel mm	: 14.00	+ LOW IDLE
Tolerance mm	: <del>+-</del> 0.05	†
		Rated speed rpm : 300
MEASUREMENT		rack travel mm : 6.00 Tolerance mm : + 0.20
Pressure hPa	: -	+ Del. quantity
Rated speed rpm	: 400	+ cm3/1000 strokes : 23.0
rack travel mm	9.40	+ Tolerance
Tolerance mm	: <b>-</b> 0.20	+ cm3/1000 strokes : + 3.0 + Check tolerance
Rated speed rpm	: 400	cm3/1000s. : +- 6.0
		Spreed
Pressure hPa	: 570	+ Tolerance
rack travel mm Tolerance mm	: 10.50 : + 0.10	+ cm3/1000 strokes : 8.0 + Check tolerance
locerance nin	. T . U. IU	- cmeck toterance - cm3/1000s. : 12.0
Pressure hPa	: 1100	+
rack travel mm	: 13.00	+
Tolerance mm	: +- 0.05	İ
		<del></del>
		+
FUEL DELIVERY CHA	RACTERISTICS	End of test specification sheet
Aneroid pressure		1
ADELOID DIESSUIE		·T

M15

hPa

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.04.96 Test oil : ISO 4113

Combination No. : 0 402 648 793

Injection pump

Pump designation : PE8P120A320LS7873 EP type number : 0 412 628 880

Governor

Governer design. : RQ300/1050PA1268 Governer no. : 0 421 801 802

Cust. part No. : 04223118KY0165-17

Customer-spec. information

Customer : KHD

Motor : BF8M1015/C Power KW : 400.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 160 Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

į

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

# **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.05 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-8-7-2-6 :-5-4-3

. 5 + 5

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance  $: \leftarrow 0.30$ 

Check

tolerance °NW : +- 0.50

Start of delivery mark

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.60 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 340.0	guide sleeve travel mm : 6.00 Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 1290 guide sleeve
Check tolerance cm3/1000s. : +- 4.0	travel mm : 11.50 Tolerance mm : + 0.50
Spreed Tolerance cm3/1000 strokes : 5.0	GUIDE SLEEVE POSITION  Rated speed rpm : 700
Check tolerance cm3/1000s. : 9.0	Rack travel in mm : 11.20 Tolerance mm : + 0.80
Rated speed rpm : 300	Toterance min : +- 0.00
Rack travel in mm: 5.00 Tolerance mm: + 0.30	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 20.0 Tolerance	Rated speed rpm : 1050 Aneroid pressure hPa : 1600
cm3/1000 strokes : + 3.0 + Check tolerance	hPa : 1600 Del. quantity cm3/1000 strokes : 340.0
cm3/1000s. : + 6.0 + Spreed + Tolerance	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokës : 8.0 + Check tolerance	cm3/1000s. : +- 4.0 Spreed
cm3/1000s. : 12.0	Tolerance cm3/1000 strokes : 5.0 Check tolerance
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	cm3/1000s. : 9.0
GUIDE SLEEVE TRAVEL	CONTROL LEVER
Rated speed rpm : 300 guide sleeve travel mm : 1.66 Tolerance mm : +- 0.20	control lever position degree : 99.0 tolerance degree : + 4.0  RATED SPEED
Rated speed rpm : 1106 guide sleeve travel mm : 6.53 Tolerance mm : + 0.15	rack travel mm : 13.60 Rated speed rpm : 1100 Tolerance 1/min : + 5
Rated speed rpm : 1050 guide sleeve travel mm : 6.00 Tolerance mm : +- 0.10	rack travel mm : 4.00 Rated speed rpm : 1210 Tolerance 1/min : +- 15
Rated speed rpm : 458 guide sleeve +	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1300
travel mm : 4.21 + Tolerance mm : + 0.10	
Rated speed rpm : 580	FOM IDLE

		+ Rated speed rpm : < 220
control lever		T Check
position degree tolerance degree	: 72.0	+ speed 1/min :> 80 + Check
toterance degree	; + 4,0	+ speed 1/min : < 240
Testing:		<u> </u>
Rated speed rpm	: 300	FUEL DELIVERY CHARACTERISTICS
rack travel mm Tolerance mm	: 5.00 : +- 0.10	+ Aneroid pressure
roterance in	. +- 0.10	∔ hPa : -
rack travel mm		Rated speed rpm : 400
Rated speed rpm Tolerance 1/min		+ Del. quantity + cm3/1000 strokes : 250.0
		† Tolerance
Rated speed rpm	: 200	+ cm3/1000 strokes : +- 1.0 + Check tolerance
CRT mm min.	: > 6.20	- cm3/1000s. : +- 4.0
		†
TORQUE CONTROL		BREAKAWAY
Rated speed rpm	: 1050	‡
rack travel mm	: 14.60	Rack travel in mm: 13.60
Tolerance mm	: +- 0.05	+ Rated speed rpm : 1100 + Tolerance 1/min : +- 5
		- + Toterance Trimin : +- 3
ANEROID/ALTITUDE		+
COMPENSATOR TEST		+ STARTING FUEL DELIVERY
		D. A. al. amount man.
SETTING		+ Rated speed rpm : 100 + rack travel mm : 9.40
Rated speed rpm	: 400	Tolerance mm : +- 0.75
Pressure hPa rack travel mm	: 1600	+ Del. quantity + cm3/1000 strokes : 145.0
Tolerance mm		+ Tolerance
		+ cm3/1000 strokes : + 20.0
MEASUREMENT		+ Check tolerance + cm3/1000s. : +- 24.0
Pressure hPa	: -	+
Rated speed rpm rack travel mm		Í
Tolerance mm	· + 0.20	
Rated speed rpm	: 400	LOW IDLE
Matta bpota i piii		Rated speed rpm : 300
Pressure hPa rack travel mm	: 570 : 11.10	rack travel mm : 5.00 Tolerance mm : +- 0.30
Tolerance mm	: +- 0.20	+ Del. quantity
	4400	- cm3/1000 strokes : 20.0
Pressure hPa rack travel mm	: 1100 : 13.60	+ Tolerance + cm3/1000 strokes : +- 3.0
Tolerance mm	: + 0.05	Check tolerance
START CUT-OUT		+ Tolerance
	400	cm3/1000 strokes : 8.0
Rated speed rpm	: > 100	+

heck tolerance m3/1000s. : 12.0	‡	
	‡	
of test specification sheet	<del> </del>	
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#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 09,04,96 : ISO 4113

Combination No. : 0 402 648 795

Injection pump

Pump designation : PE8P12OA32OLS7873 EP type number : 0 412 628 880

Governor

Governer design. : RQV300...1050PA1258K

Governer no. : 0 421 815 490

Cust. part No. : 04223330KY0165-17

Customer-spec. information

Customer : KHD

: BF8M1015/C Motor

: 400.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 115
Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 4.05 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-8-7-2-6 : - 5- 4- 3

Phasing : 0-45-90-135-180

: -225-270-315 Tolerance : +- 0.30

Check

tolerance "NW : + 0.50

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance "NW : +- 0.75

: 1 Barrel no.

# BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 14.70 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 360.0 Tolerance	travel mm : 13.50 Tolerance mm : + 0.50
cm3/1000 strokes : +- 1.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 1175
Spreed Tolerance cm3/1000 strokes : 6.0	Rack travel in mm: 13.70 Tolerance mm: + 1.50
Check tolerance cm3/1000s. 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 300	Rated speed rpm : 1050 Aneroid pressure hPa : 1000
Rack travel in mm : 4.80 Tolerance mm : + 0.20 Del. quantity	Del. quantity cm3/1000 strokes: 360.0 Tolerance
cm3/1000 strokes : 23.0 Tolerance	cm3/1000 strokes : + 1.0 + Check tolerance
<pre>cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0</pre>	cm3/1000s. : + 4.0 Spreed
cm3/1000s. : +- 6.0 Spreed Tolerance	Tolerance cm3/1000 strokes : 6.0 Check tolerance
cm3/1000 strokes : 8.0 Check tolerance	cm3/1000s. : 9.0
cm3/1000s. : 12.0  (B) SETTING OF INJECTION PUMP	CONTROL LEVER
WITH GOVERNOR	control lever position degree : 119.0 tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	+ RATED SPEED
Rated speed rpm : 300 guide sleeve travel mm : 1.60 Tolerance mm : + 0.20	+ rack travel mm : 13.70 + Rated speed rpm : 1085 + Tolerance 1/min : +- 5
Rated speed rpm : 1097 guide sleeve travel mm : 10.07	rack travel mm : 4.00 Rated speed rpm : 1200 Tolerance 1/min : + 15
Tolerance mm : +- 0.15  Rated speed rpm : 796	rack travel mm : 0.50 Tolerance mm : + 0.50
guide sleeve travel mm : 6.87 Tolerance mm : +- 0.25	+ Rated speed rpm : 1350 + +
Rated speed rpm : 510 guide sleeve	LOW IDLE
travel mm : 4.02 Tolerance mm : + 0.25	+ control lever + position degree : 71.0
Rated speed rpm : 1340	tolerance degree : +- 4.0

# Testing:

Rated speed rpm : 300 rack travel mm : 4.80 Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm max. : > 6.30

Rated speed rpm : 350

#### TORQUE CONTROL

Rated speed rpm : 1050 rack travel mm : 14.70 Tolerance mm : +- 0.05

Rated speed rpm : 800 rack travel mm : 14.00 Tolerance mm : +- 0.25

Rated speed rpm : 600 rack travel mm : 12.70 Tolerance mm : +- 0.25

Rated speed rpm : 450 rack travel mm : 11.40 Tolerance mm : +- 0.25

# ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

Rated speed rpm : 1050
Pressure hPa : 1000
rack travel mm : 14.70
Tolerance mm : +- 0.05

#### **MEASUREMENT**

Pressure hPa : Rated speed rpm : 1050
rack travel mm : 8.90
Tolerance mm : +- 0.20

Rated speed rpm : 1050

Pressure hPa : 500 rack travel mm : 11.95 Tolerance mm : + 0.10

Pressure hPa : 800 rack travel mm : 14.10 Tolerance mm : + 0.05

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : - Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 250.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

#### BREAKAWAY

Rack travel in mm: 13.70
Rated speed rpm: 1085
Tolerance 1/min: +- 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.90
Tolerance mm : +- 0.30
Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : +- 20.0
Check tolerance

: +- 24.0

# LOW IDLE

cm3/1000s.

Rated speed rpm 300 4.80 rack travel mm Tolerance mm 0.20 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +-6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

End of test specification sheet

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 09.04.96 Edition Test oil : ISO 4113

Combination No. : 0 402 648 797

Injection pump

Pump designation : PE8P12OA32OLS7873 EP type number : 0 412 628 880

Governor

Governer design: : RQ750PA1231 : 0 421 801 791 Governer no.

Cust. part No. : 04222112KY0165-17

Customer-spec. information : KHD Customer

: BF8M1015/C Motor

Power KW : 318.0

# TEST BENCH REQUIREMENTS

: 3.2 Inlet line

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar

: 1 680 750 075 Test Lines

Outside diameter : 8.0 x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm Tolerance mm : + - 0.05

Check

: + 0.10tolerance mm

Rack travel in mm : 10.50 : +- 1.50 Tolerance mm

: 1-8-7-2-6 :-5-4-3 Firing order

: 0-45-90-135-180 Phasing

: -225-270-315 : +- 0.30 Tolerance

Check

tolerance \*NW : +- 0.50

Start of delivery mark

1 Barrel no. :

# BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 13.30 Tolerance mm : + - 0.05

Del. quantity

cm3/1000 strokes : 365.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance cm3/1000S. : +--

	+ Aneroid pressure
Spreed	+ hPa : -
Tolerance	+ Del. quantity
cm3/1000 strokes : 5.0	+ cm3/1000 strokes : 365.0
	+ Tolerance
Check tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000s. : 9.0	+ Check tolerance
	+  cm3/1000s. : + 4.0
Rated speed rpm : 300	+ Spreed
n 1 1 1 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	+ Tolerance
Rack travel in mm: 4.70	+ cm3/1000 strokes : 5.0
Tolerance mm : +- 0.20	+ Check tolerance
Del. quantity cm3/1000 strokes : 20.0	+ cm3/1000s. : 9.0
cm3/1000 strokes : 20.0 Tolerance	Ť
cm3/1000 strokes : +- 3.0	T
Check tolerance	CONTROL LEVER
cm3/1000s. : +- 6.0	I CONTROL LEVER
Spreed	+ control lever
Tolerance	+ position degree : 109.0
cm3/1000 strokes : 8.0	+ tolerance degree : +- 4.0
Check tolerance	
cm3/1000s. : 12.0	+ RATED SPEED
	+
	rack travel mm : 0.50
(B) SETTING OF INJECTION PUMP	+ Tolerance mm : +- 0.50
WITH GOVERNOR	+ Rated speed rpm : 900
	+
	+ ASSEMBLY GOVERNOR SETTING
GUIDE SLEEVE TRAVEL	<b>†</b>
740	+ Rated speed rpm : 750
Rated speed rpm : 768	rack travel mm : 12.30
guide sleeve	+ Rated speed rpm : 780
travel mm : 6.28 Tolerance mm : + 0.15	
Tolerance mm : + 0.15	+ Tolerance 1/min : + 4 + rack travel mm : 5.50
Rated speed rpm : 610	T rack cravec min . 3.30
guide sleeve	rack travel mm : 0.50
travel mm : 0.52	+ Tolerance mm : + 0.50
Tolerance mm : +- 0.25	+ Rated speed rpm : 900
7000 41700 11811	
Rated speed rpm : 900	+ Rated speed rpm : 751
guide sleeve	rack travel mm : 12.30
travel mm : 14.60	+
Tolerance mm : + 0.15	+ Rated speed rpm : 781
	+ Tolerance 1/min : + 4
Rated speed rpm : 866	+ rack travel mm : 5.50
guide sleeve	<b>†</b>
travel mm : 12.00	+ rack travel mm : 0.50
Tolerance mm : +- 0.25	+ Tolerance mm : + 0.50
Rated speed rpm : 930	Rated speed rpm : 752
Rated speed rpm : 930 guide sleeve	+ Rated speed rpm : 752 + rack travel mm : 12.30
travel mm : 13.50	T I GUN CI GYEC HAH . IC.JU
Tolerance mm : +- 0.50	Rated speed rpm : 782
(000, 0100 mm 0100	+ Tolerance 1/min : +- 4
	+ rack travel mm : 5.50
FULL LOAD DELIVERY AT FULL LOAD STOP	+
	+ rack travel mm : 0.50
Rated speed rpm : 700	+ Tolerance mm : + 0.50

Rated speed rpm	: 900
Rated speed rpm rack travel mm	: 753 : 12.30
Rated speed rpm Tolerance 1/min rack travel mm	: 783 : + 4 : 5.50
rack travel mm Tolerance mm	: 0.50 : +- 0.50
Rated speed rpm rack travel mm	: 754 : 12.30
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 900
Rated speed rpm rack travel mm	
Rated speed rpm Tolerance 1/min rack travel mm	: 785 : +- 4 : 5.50
rack travel mm Tolerance mm	: 0.50 : + 0.50
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	
START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 100 : < 560
Check speed 1/min	; > 80
Check speed 1/min	: < 580
STARTING FUEL DEL	IVERY

rack travel mm Tolerance mm Del. quantity	: 20.25 : +- 0.75
cm3/1000 strokes	: 205.0
Tolerance cm3/1000 strokes Check tolerance	: + 20.0
cm3/1000s.	: <del></del> 24.0
LOW IDLE	
Rated speed rpm	: 300
rack travel mm	: 4.70
Tolerance mm Del. quantity	: +- 0.20
cm3/1000 strokes	: 20.0
Tolerance cm3/1000 strokes	: <b>←</b> 3.0

: +- 6.0

: 12.0

End of test specification sheet

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s.

Check tolerance

cm3/1000s.

Spreed Tolerance

Rated speed rpm : 100

# BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 10.04.96 Test oil : ISO 4113 Combination No. : 0 402 736 885 Injection pump Pump designation : PES6P120A120RS7370 EP type \*\* teber : 0 412 726 934 Governo Governer design. : RQV400...1250PA1212K : 0 421 815 462 Governer no. Cust. part No. : 3931599 Customer-spec. information : CDC Customer Motor : 6BTA-A Power KW : 131.0 TEST BENCH REQUIREMENTS Inlet line : 3.2 Test oil inlet : 40 : + 2.0 temp. °C Tolerance °C Overflow valve : 2 417 413 086 Inlet press. bar : 2.0 : **←** 0.1 Tolerance bar Test nozzle holde : 1 688 901 103 assembly Opening pressure

208.5

: 1 680 750 015

: +- 1.5

REMARKS	
(A) INJECTION PUR Set equal delive per values	
BEGINNING OF DEL	IVERY
Test pressure bar Tolerance bar	r: 17.0 : + 1.0
Firing order	: 1-5- 3- 6- 2- : 4
Phasing	: 0-60-120-180-240 : -300
Tolerance Check tolerance °NW	: +- 0.50 : +- 0.75
Start of delivery	y blocking
°NW after s.o.d. Tolerance Check	: 7.00 : +- 0.50
tolerance *NW	: +- 0.75
Barrel no.	: 1
BASIC SETTING	
Rated speed rpm	: 1250
Rack travel in mm Tolerance mm	n: 13.85 : +- 0.05
Del. quantity cm3/1000 strokes	: 170.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000S.	: +- 4.0
Spreed	₹

x inside diameter :

3.0 600

bar

Tolerance bar

Test lines

Outside diameter : 6.0

Tolerance	t	Tolerance mm	: +- 0.20
cm3/1000 strokes Check tolerance	. 8.0	Rated speed rpm	<b>:</b> 425
cm3/1000s.	: 12.0	TORQUE CONTROL	
Del. quantity	<u> </u>	TORQUE CUNTRUL	
cm3/1000 strokes Tolerance	: 19.5	Rated speed rpm rack travel mm	
cm3/1000 strokes Check tolerance	: + 3.0	Tolerance mm	
cm3/1000s. Spreed	: +- 5.0	Rated speed rpm rack travel mm	
Tolerance cm3/1000 strokes	: 4.0	Tolerance mm	: +- 0.10
Check tolerance	+	Rated speed rpm	
cm3/1000S.	: 8.0	rack travel mm Tolerance mm	: 12.50 : +- 0.20
(B) SETTING OF INJ	JECTION PUMP		
WITH GOVERNOR	+	ANEROID/ALTITUDE COMPENSATOR TEST	
FULL LOAD DELIVERY	AT FULL LOAD STOP	SETTING	
Rated speed rpm	: 1250	Rated speed rpm	: 1250
Aneroid pressure	+	Pressure hPa	: 1200
hPa	: 1200	MEASUREMENT	
Del. quantity cm3/1000 strokes	: 170.0	MEMOUREMENT	
Tolerance		Pressure hPa	: -
cm3/1000 strokes	: + 1.0	Rated speed rpm	: 1250
Check tolerance	+	rack travel mm	: 9.40
Spreed	: +- 4.0	Tolerance mm	: +- 0.20
Tolerance cm3/1000 strokes	: 8.0	Rated speed rpm	: 1250
Check tolerance	+	Pressure hPa	: 440
cm3/1000s.	: 12.0	rack travel mm Tolerance mm	: 12.55 : +- 0.30
RATED SPEED	İ	Pressure hPa	: 265
TITLE OF EED	+	rack travel mm	: 10.80
rack travel mm	: 12.80	Tolerance mm	: <del>+</del> 0.20
Rated speed rpm	: 1330 +		
Tolerance 1/min	: +- 15 +	START CUT-OUT	
rack travel mm	: 0.50	SIARI CO1-001	
Tolerance mm	: + 0.50	Rated speed rpm	: > 100
	: 1700	Rated speed rpm	
	+		
	†	Check	
LOW IDLE	+	speed 1/min Check	:> 80
Testing:	‡	speed 1/min	: < 325
Rated speed rpm	: 420	FUEL DELIVERY CHAP	RACTERISTICS
	6.20	OLL PLLIVENT CHAI	WIO LEILEO LEGO

Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance	; <del></del>
cm3/1000s.	: +- 4.0
BREAKAWAY  Rack travel in mm Rated speed rpm Tolerance 1/min	: 12.80 : 1330 : + 15
STARTING FUEL DELI	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 11.70 : ← 0.50 : 157.0 : ← 20.0 : ← 25.0
LOW IDLE	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 19.5 : +- 3.0 : +- 5.0

Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 8.0

End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 382

Injection pump

Pump designation : PES6A100D120RS2869

EP type number : 9 400 084 038

Governor

Governer design. : RQV350...1100AB1303R

Governer no. : 9 420 080 381

Cust. part No. : 3356052

Customer—spec. information Customer : CUMMINS

Motor : 6 CTAA 215 hp

Power KW : 159.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.60 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference °CS : 4.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 145.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

N<sub>0</sub>2

		†
Spreed		
Tolerance		+ FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes	: 3.5	+
		+ Rated speed rpm : 1100
Check tolerance		+ Aneroid pressure
cm3/1000s.	: 8.0	+ hPa : 1100
		+ Del. quantity
Del. quantity		+ cm3/1000 strokes : 145.5
cm3/1000 strokes	: 17.5	+ Tolerance
Tolerance		+ cm3/1000 strokes : + 1.0
cm3/1000 strokes	: +- 2.0	+ Check tolerance
Check tolerance		+ cm3/1000s. : +- 3.0
cm3/1000s.	: <del>+</del> 4.5	+ Spreed
Spreed		+ Tolerance
Tolerance		+ cm3/1000 strokes : 3.5
cm3/1000 strokes	: 5.5	† Check tolerance
Check tolerance		+ cm3/1000s. : 8.0
cm3/1000s.	: 9.0	+
		+
_		
(B) SETTING OF IN	NECTION PUMP	+ CONTROL LEVER
WITH GOVERNOR		†
		+ control lever
		+ position degree : 55.0
GUIDE SLEEVE TRAV	EL	tolerance degree : +- 4.0
	4000	†
Rated speed rpm	: 1050	+ control lever
guide sleeve		+ position degree : 110.0
travel mm	: 5.90	tolerance degree : +- 4.0
Tolerance mm	: + 0.10	†
<b></b>	0.00	+ RATED SPEED
Rated speed rpm	: 850	†
guide sleeve	. 75	+ rack travel mm : 11.70
travel mm	: 4.75	+ Rated speed rpm : 1170
Tolerance mm	: +- 0.25	† Tolerance 1/min : + 5
	750	†
Rated speed rpm	: 350	+ rack travel mm : 4.00
guide sleeve	4 / 5	Rated speed rpm : 1350
travel mm	: 1.45	Tolerance 1/min : +- 15
Tolerance mm	: + 0.25	† , , , , , , , , , , , , , , , , , , ,
Data da anti torre	. 400	+ rack travel mm : 0.50
Rated speed rpm	: 600	+ Tolerance mm : + 0.50
guide sleeve	: 3.65	Rated speed rpm : 1500
travel mm	: 5.65 : +- 0.25	<u>†</u>
Tolerance mm	0.25	I
Rated speed rpm	: 1350	+ LOW IDLE
guide sleeve	. 1000	I LOW IDEL
travel mm	: 8.35	I
Tolerance mm	: +- 0.25	T control lever
וטנפרמוונל ווווו		+ position degree : 68.0
····		+ tolerance degree : +- 4*0
GUIDE SLEEVE POSIT	TTON	Teb
GAINE REGENE LOST	I TOIT	T control lever
Rated speed rpm	• 1360	position degree : 13.0
waren sheen i biii	. 1300	tolerance degree : +- 4.0
Rack travel in mm	• 16 50	Total diluc degree . The
Tolerance mm		Testing:
TOLET AFILE HAIT		
		<b>f</b>

Rated speed rpm rack travel mm Tolerance mm	; 350 : 5.40 : ← 0.10	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 100	Aneroid pressure
CRT mm min.	: > 8.00	Rated speed rpm : 800  Del. quantity
Rated speed rpm	: 375	
TORQUE CONTROL		+ Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 12.75 : +- 0.05	cm3/1000s. : + 4.0  Aneroid pressure  hPa : -  Rated speed rpm : 500
Rated speed rpm rack travel mm Tolerance mm	: 12.75	Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000 strokes : +- 1.0
ANEROID/ALTITUDE COMPENSATOR TEST		Check tolerance cm3/1000s. : +- 3.0
SETTING		BREAKAWAY
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1100 : 12.75	Rack travel in mm : 11.70 Rated speed rpm : 1170 Tolerance 1/min : +- 5
MEASUREMENT		STARTING FUEL DELIVERY
Pressure hPa Rated speed rpm	500	Rated speed rpm : 100 rack travel mm : 20.00
Rated speed rpm	: 500	Tolerance mm : +- 1.00 Del. quantity
Pressure hPa rack travel mm Tolerance mm	: 690 : 2.25 : +- 0.15	cm3/1000 strokes : 168.0 Tolerance cm3/1000 strokes : +- 8.0 Check tolerance
Pressure hPa rack travel mm Tolerance mm	: 300 : 0.70 : ← 0.10	cm3/1000s. : +- 11.0
START CUT-OUT		LOW IDLE
Rated speed rpm Rated speed rpm		Del. quantity cm3/1000 strokes : 17.5 Tolerance
Check speed 1/min Check	: > 80	- cm3/1000 strokes : +- 2.0 - Check tolerance - cm3/1000s. : +- 4.5
speed 1/min	: < 290	Spreed Tolerance cm3/1000 strokes: 5.5

Check tolerance cm3/1000s.	:	9.0	
End of test speci	ficat	tion sheet	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 386

Injection pump

Pump designation : PES6A95D41ORS2812 EP type number : 9 400 084 028

Governor

Governer design. : RQV350...1300AB1304L

Governer no. : 9 420 080 382

Cust. part No.

Customer—spec. information Customer : MWM Motor : 6.10 T Power KW : 124.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 2.00

# BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 91.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

	+
Spreed Tolerance cm3/1000 strokes : 3.5	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000s. : 8.0	+ Rated speed rpm : 1300 + Aneroid pressure + hPa : 900
Del. quantity cm3/1000 strokes : 12.5	+ Del. quantity + cm3/1000 strokes : 91.0 + Tolerance
Tolerance cm3/1000 strokes : +- 2.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance
Check tolerance cm3/1000s. : +- 4.5	+ cm3/1000s. : +- 3.0 + Spreed
Spreed Tolerance	Tolerance : 3.5
cm3/1000 strokes : 5.5 Check tolerance	+ Check tolerance + cm3/1000S. : 8.0
cm3/1000s. : 9.0	+
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER
	control lever
	position degree : 58.0
GUIDE SLEEVE TRAVEL	tolerance degree : +- 4.0
Rated speed rpm : 1350	control lever
guide sleeve - 7.20 -	+ position degree : 113.0 + tolerance degree : + 4.0
travel mm : 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20 - 7.20	tolerance degree : +- 4.0
- Color differ han	RATED SPEED
Rated speed rpm : 800 -	
guide sleeve	rack travel mm : 10.60
travel mm : 3.95 - Tolerance mm : + 0.25 -	+ Rated speed rpm : 1418 + Tolerance 1/min : +- 8
Tolerance mm : +- 0.25 -	+ Tolerance 1/min : +- 8 +
Rated speed rpm : 300 -	rack travel mm : 4.00
guide sleeve	Rated speed rpm : 1550
travel mm : 1.05 - Tolerance mm : +- 0.25 -	Tolerance 1/min ? +- 15
- Cool dilloc limit	rack travel mm : 0.50
Rated speed rpm : 550	Tolerance mm : +- 0.50
guide sleeve - travel mm : 2.75 -	Rated speed rpm : 1700
travel mm : 2.75 - Tolerance mm : + 0.25 -	+
Rated speed rpm : 1500	LOW IDLE
guide steeve	- COM IDEL
travel mm : 8.55	+
Tolerance mm : +- 0.25	control lever position degree : 69.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	+
Rated speed rpm : 1485	control lever position degree : 13.0
<del>-</del>	tolerance degree : +- 4.0
Rack travel in mm : 16.50 Tolerance mm : + 1.30	Testing:
	F <sup>-</sup>

Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.80 : + 0.10	Rated speed rpm : < 270 Check
Rated speed rpm		speed 1/min :> 80
CRT mm min.		speed 1/min : < 290
Rated speed rpm	: 400	FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL	<u> </u>	Aneroid pressure hPa : 900 Rated speed rpm : 800
Rated speed rpm rack travel mm Tolerance mm	: 1300 : 11.65	+ Del. quantity + cm3/1000 strokes : 93.0
		+ Tolerance + cm3/1000 strokes : +- 2.0
Rated speed rpm rack travel mm Tolerance mm	: 12.05	+ Check tolerance + cm3/1000s. : +- 4.0
Rated speed rom	: 880	Aneroid pressure hPa : -
rack travel mm Tolerance mm	: 12.05 : +- 0.05	Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 51.0
Rated speed rpm rack travel mm	: 1260 : 11.65	Tolerance + cm3/1000 strokes : +- 1.5
Tolerance mm	: +- 0.05	Check tolerance cm3/1000s. : +- 3.0
ANEROID/ALTITUDE COMPENSATOR TEST		BREAKAWAY
SETTING		Rack travel in mm : 10.60 Rated speed rpm : 1418
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 900 : 12.05	Tolerance 1/min : +- 8
MEASUREMENT	. + 6.05	STARTING FUEL DELIVERY
Pressure hPa Rated speed rpm	: – : 500	Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : +- 1.00
Rated speed rpm	: 500	Del. quantity cm3/1000 strokes : 155.0 Tolerance
Pressure hPa rack travel mm Tolerance mm	: 470 : 1.75 : +- 0.15	cm3/1000 strokes : + 8.0 Check tolerance cm3/1000s. : + 11.0
Pressure hPa rack travel mm Tolerance mm	: 0.60	LOW IDLE
START CUT-OUT		} Del. quantity
Rated speed rpm	; > 100	+ cm3/1000 strokes : 12.5

Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : 9.0

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 11.04.96 : ISO 4113 Test oil Combination No. : 9 400 085 387 Injection pump Pump designation : PES6A100D320/3RS2691 EP type number : 9 410 230 028 Governor Governer design. : RQV450...1150AB1305R : 9 420 080 383 Governer no. Cust. part No. : 3355883 Customer-spec. information Customer : CUMMINS : 6 CT - 8.3 L Motor : 126.8 Power KW TEST BENCH REQUIREMENTS : 3.2 Inlet line Test oil inlet temp. °C Tolerance °C : +- 2.0 : 1 419 992 198 Overflow valve Inlet press. bar : 1.5 Test nozzle holde : 0 681 343 009 assembly

173.5

: 1 680 750 014

1.5

x inside diameter : x length mm :	2.0 600
REMARKS	
(A) INJECTION PUMP SE Set equal delivery qu per values	
BEGINNING OF DELIVERY	
Test pressure bar : Tolerance bar : +	26.0 - 1.0
Prestroke mm : Tolerance mm : + Check	2.85 - 0.05
tolerance mm : +	- 0.10
	10.50 - 1.50
Firing order : 4	1- 5- 3- 6- 2-
Phasing : !	0–60–120–180–240 300
Beginning of delivery	differende
and maximum rack travel : Tolerance mm : + Difference * CS :	10.50 - 1.50 3.50
BASIC SETTING	
Rated speed rpm :	1150
Rack travel in mm : Tolerance mm : +-	10.45 - 0.05
Del. quantity cm3/1000 strokes :	92.0
Tolerance cm3/1000 strokes : +	- 1.0
Check tolerance cm3/1000s. : +-	- 3.0

N10

bar

Opening pressure

Test lines

Outside diameter : 6.0

Tolerance bar

	<u>-</u>	L
Spreed Tolerance cm3/1000 strokes	: 3.5	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1150
Check tolerance 5m3/1000s.	: 8.0	Aneroid pressure hPa : - Del. quantity
Del. quantity cm3/1000 strokes Tolerance	: 11.5	cm3/1000 strokes : 92.0 Tolerance cm3/1000 strokes : +- 1.0
cm3/1000 strokes Check tolerance	: +- 2.0	- Check tolerance - cm3/1000s. : + 3.0
cm3/1000s. Spreed	: +- 4.5	Spreed Tolerance
Tolerance cm3/1000 strokes	: 5.5	- cm3/1000 strokes : 3.5 - Check tolerance
Check tolerance cm3/1000s.	: 9.0	- cm3/1000s. : 8.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	- CONTROL LEVER
	-	- control lever
GUIDE SLEEVE TRAV	ÆL -	- position degree : 58.0 - tolerance degree : +- 4.0
Rated speed rpm guide sleeve	: 1150	- control lever - position degree : 113.0
travel mm Tolerance mm	: 7.50 : +- 0.10	tolerance degree : +- 4.0
Rated speed rpm	: 900	- RATED SPEED
guide sleeve	+	rack travel mm : 9.40
travel mm Tolerance mm	: 5.65 : +- 0.25	- Rated speed rpm : 1195 - Tolerance 1/min : +- 5
Rated speed rpm guide sleeve	: 400	rack travel mm : 4.00 Rated speed rpm : 1300
travel mm Tolerance mm	: 1.85 : + 0.25	Tolerance 1/min : +- 15
Rated speed rpm	: 650	- rack travel mm : 0.50 - Tolerance mm : +- 0.50 - Rated speed rpm : 1450
guide sleeve travel mm	: 4.35	- Rated speed rpm : 1450 -
Tolerance mm	+	
Rated speed rpm guide sleeve	+	LOW IDLE
travel mm Tolerance mm	: 8.95 : + 0.25	· control lever
		position degree : 72.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSI	TION	control lever
Rated speed rpm	: 1245	position degree : 16.0 tolerance degree : +- 4.0
Rack travel in mm Tolerance mm		Testing:
	+	

Rated speed rpm 450 rack travel mm 4,90 : +- 0.10 Tolerance mm 100 Rated speed rpm : > 11.00 CRT mm min. Rated speed rpm 500 TORQUE CONTROL Rated speed rpm 1150 rack travel mm 10.45 : +- 0.05 Tolerance mm 750 Rated speed rpm 10.75 rack travel mm Tolerance mm : +- 0.05 850 Rated speed rpm 10.75 rack travel mm : + - 0.05Tolerance mm : 1050 Rated speed rpm rack travel mm : 10.45 : ← 0.05 Tolerance mm START CUT-OUT 100 Rated speed rpm : > : < 300 Rated speed rpm Check speed 1/min : > 80 Check speed 1/min 320 : < FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 91.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance 4.0 cm3/1000S.: +-BREAKAWAY

Tolerance 1/min : +- 5 STARTING FUEL DELIVERY 100 Rated speed rpm : rack travel mm 20.00 Tolerance mm : +- 1.00 Del. quantity cm3/1000 strokes : 164.0 Tolerance cm3/1000 strokes : +- 8.0Check tolerance cm3/1000s. : + 11.0LOW IDLE Del. quantity cm3/1000 strokes : 11.5 Tolerance 2.0 cm3/1000 strokes : +-Check tolerance cm3/1000s.4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. 9.0

End of test specification sheet

Rack travel in mm : 9.40 Rated speed rpm : 1195

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 11.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 085 387EF

Injection pump

Pump designation : PES6A100D320/3RS2691

: -2

EP type number : 9 410 230 028

Governor

Governer design. : RQV450...1150AB1305R

Governer no. : 9 420 080 383

Cust. part No. : 3355882

Customer-spec. information

Customer : CUMMINS Motor : 6 CT - 8.3 L

: 111.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85 Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

: 10.50 travel travel Tolerance mm Tolerance mm : + 1.50 Difference ° CS : 3.50

# BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 10.85 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 99.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

		<b>+</b>
Spreed		FULL LOAD DELTHERY AT EULL LOAD STOR
Tolerance cm3/1000 strokes	: 3.5	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance		+ Rated speed rpm : 1150 + Aneroid pressure
cm3/1000s.	: 8.0	+ hPa : -
Dal suppositive	•	+ Del. quantity + cm3/1000 strokes : 99.0
Del. quantity cm3/1000 strokes	: 11.5	+ Tolerance
Tolerance	: +- 2.0	cm3/1000 strokes : + 1.0
cm3/1000 strokes Check tolerance	: +- 2.0	+ Check tolerance + cm3/1000s. : +- 3.0
cm3/1000s.	: +- 4.5	+ Spread
Spreed Tolerance		+ Tolerance + cm3/1000 strokes : 3.5
cm3/1000 strokes	: 5.5	Check tolerance
Check tolerance cm3/1000s.	: 9.0	+ cm3/1000s. : 8.0
	•	+
(B) SETTING OF IN	JECTION PUMP	CONTROL LEVER
WITH GOVERNOR	-	+
		+ control lever + position degree : 58.0
GUIDE SLEEVE TRAV	/EL -	tolerance degree : +- 4.0
Rated speed rpm	: 1150	t control lever
guide sleeve	7.50	position degree : 113.0
travel mm Tolerance mm	: 7.50 - : + 0.10 -	+ tolerance degree : +- 4.0
	-	RATED SPEED
Rated speed rpm guide sleeve	: 900 -	t rack travel mm : 9.80
travel mm	: 5.65	Rated speed rpm : 1195
Tolerance mm	: + 0.25	Tolerance 1/min : +- 5
Rated speed rpm	: 400	rack travel mm : 4.00
guide sleeve travel mm	: 1.85	Rated speed rpm : 1310 Tolerance 1/min : + 15
Tolerance mm	: <del>+-</del> 0.25	+
Rated speed rpm	: 650	rack travel mm : 0.50 Tolerance mm : + 0.50
guide sleeve	-	Rated speed rpm : 1450
travel mm Tolerance mm	: 4.35 : + 0.25	İ
rocerance mm	<u>.</u>	
Rated speed rpm	: 1300 -	LOW IDLE
guide sleeve travel mm	: 8.95	<del>-</del>
Tolerance mm	: +- 0.25	control lever
		+ position degree : 72.0 + tolerance degree : +- 4.0
GUIDE SLEEVE POST	TION	+
Rated speed rpm	: 1245	control lever position degree : 17.0
	-	tolerance degree : +- 4.0
Rack travel in mm		Testing:
Tolerance mm	: 1.50	resumg. F
	'	•

Rated speed rpm rack travel mm Tolerance mm	: 450 : 4.90 : +- 0.10
Rated speed rpm	: 100
CRT mm min.	; > 11.00
Rated speed rpm	: 500
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 600 : 10.85 : +- 0.05
START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 100 : < 370
Check speed 1/min Check	: > 80
speed 1/min	: < 390
FUEL DELIVERY CHAI	RACTERISTICS
Aneroid pressure hPa	• -
Rated speed rpm Del. quantity	600
cm3/1000 strokes Tolerance	: 89.5
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s.	: +- 3.8
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	
STARTING FUEL DELI	EVERY
Rated speed rpm rack travel mm	: 100 : 20.00

N15\_

Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.00 : 164.0 : +- 8.0 : +- 11.0
LOW IDLE	
Del. quantity cm3/1000 strokes	: 11.5
Tolerance	; 11.5
cm3/1000 strokes	: +- 2.0
Check tolerance	
cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 5.5
	. ,,,
Check tolerance	

End of test specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 387EG

Injection pump

Pump designation : PES6A100D320/3RS2691

: -2

EP type number : 9 410 230 028

Governor

Governer design. : RQV450...1150AB1305R

Governer no. : 9 420 080 383

Cust. part No. : 3355884

Customer-spec. information

Customer : CUMMINS Motor : 6 CT - 8.3 L

Power KW : 144.3

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

# **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50Tolerance mm : + 1.50 Difference ° CS : 3.50

# BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 107.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : +- 3.0

		_
Spreed Tolerance cm3/1000 strokes	; 3.5	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1150
Check tolerance cm3/1000s.	: 8.0	Aneroid pressure  hPa  Del. quantity
Del. quantity cm3/1000 strokes Tolerance	: 11.5	cm3/1000 strokes : 107.0 Tolerance cm3/1000 strokes : +- 1.0
cm3/1000 strokes Check tolerance	: +- 2.0	+ Check tolerance - cm3/1000S. : +- 3.0
cm3/1000s. Spreed	: +- 4.5	+ Spreed + Tolerance
Tolerance cm3/1000 strokes Check tolerance	: 5,5	+ cm3/1000 strokes : 3.5 + Check tolerance + cm3/1000s. : 8.0
cm3/1000s.	: 9.0	+ cm3/1000s. : 8.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	CONTROL LEVER
		+ control lever
GUIDE SLEEVE TRAV	/EL	<pre>+ position degree : 58.0 + tolerance degree : + 4.0</pre>
Rated speed rpm guide sleeve	: 1150	control lever position degree : 113.0
travel mm	: 7.50	tolerance degree : + 4.0
Tolerance mm	: + 0.10	RATED SPEED
Rated speed rpm	: 900	+ + rack travel mm : 10.30
guide sleeve travel mm	: 5.65	Rated speed rpm : 1195
Tolerance mm	: + 0.25	Tolerance 1/min : + 5
Rated speed rpm guide sleeve	: 400	rack travel mm : 4.00 Rated speed rpm : 1315
travel mm Tolerance mm	: 1.85 : + 0.25	+ Tolerance 1/min : + 15
Rated speed rpm guide sleeve	: 650	+ rack travel mm : 0.50 + Tolerance mm : + 0.50 + Rated speed rpm : 1450
travel mm	: 4.35	+ 1750
Tolerance mm	: + 0.25	+
Rated speed rpm guide sleeve		+ LOW IDLE
travel mm Tolerance mm	: 8.95 : +- 0.25	t control lever
TOTE FAIRE MIN	0.23	+ position degree : 72.0
GUIDE SLEEVE POSI	TION	tolerance degree : + 4.0
		control lever
Rated speed rpm		+ position degree : 17.0 + tolerance degree : + 4.0
Rack travel in mm Tolerance mm		Testing:
		1

Rated speed rpm rack travel mm Tolerance mm	: 450 : 4.90 : +- 0.10
Rated speed rpm	: 100
CRT mm min.	: > 11.00
Rated speed rpm	: 500
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 11.35 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 850 : 11.85 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 950 : 11.55 : +- 0.05
START CUT-OUT	
Rated speed rpm Rated speed rpm	
Check speed 1/min Check	: > 80
speed 1/min	: < 390
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: – : 700
Del. quantity cm3/1000 strokes	: 115.0
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s.	: ← 4.0
BREAKAWAY	
Rack travel in mm Rated speed rpm	: 10.30 : 1195

Tolerance 1/min	; <del>+-</del> 5	
STARTING FUEL DEL		
Rated speed rpm rack travel mm Tolerance mm	: 100 : 20.00 : + 1.00	
Del. quantity cm3/1000 strokes	: 164.0	
Tolerance cm3/1000 strokes Check tolerance	: +- 8.0	
cm3/1000s.	: + 11.0	
LOW IDLE		
Del. quantity cm3/1000 strokes Tolerance	: 11.5	
cm3/1000 strokes Check tolerance	: +- 2.0	
cm3/1000s. Spreed	: +- 4.5	
Tolerance cm3/1000 strokes	: 5.5	
Check tolerance cm3/1000s.	: 9.0	
End of test specification sheet		

End of test specification sheet

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 389

Injection pump

Pump designation : PES6A95D410RS2812 EP type number : 9 400 084 028

Governor

Governer design. : RQV350...1300AB1309L

Governer no. : 9 420 080 386

Cust. part No. :

Customer—spec. information Customer : MWM Motor : 6.10 TCA Power KW : 138.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 2.00

# BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.95 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 99.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : + 3.0

		+
Spreed Tolerance		FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes	; 3.5	+ FOLL COAD DELIVERY AT FULL LOAD STOP
0) 1		Rated speed rpm : 1300
Check tolerance cm3/1000s.	: 8.0	+ Aneroid pressure + hPa : 900
	. 0.0	+ Del. quantity
Del. quantity	. 47.0	+ cm3/1000 strokes : 99.0
cm3/1000 strokes Tolerance	: 13.0	+ Tolerance + cm3/1000 strokes : +- 1.0
cm3/1000 strokes	: +- 2.0	+ Check tolerance
Check tolerance cm3/1000s.	: + 4.5	+  cm3/1000s. : + 3.0
Spreed	; +- 4.5	+ Spreed + Tolerance
Tolerance		+ cm3/1000 strokes : 3.5
cm3/1000 strokes Check tolerance	: 5.5	+ Check tolerance + cm3/1000s. : 8.0
cm3/1000s.	: 9.0	+
·		+
(B) SETTING OF I	NIECTION PHMP	CONTROL LEVER
WITH GOVERNOR	13.23 ( 2017 ) ( 3111	+
		control lever
GUIDE SLEEVE TRAY	VEL	+ position degree : 59.0 + tolerance degree : + 4.0
		+
Rated speed rpm	: 1350	+ control lever
guide sleeve travel mm	; 7.20	position degree : 114.0 tolerance degree : + 4.0
Tolerance mm	: +- 0.10	+
Datad speed rpm	: 800	+ RATED SPEED
Rated speed rpm guide sleeve	. 800	rack travel mm : 10.90
travel mm	: 3.95	+ Rated speed rpm : 1425
Tolerance mm	: <del>+-</del> 0.25	Tolerance 1/min : +- 5
Rated speed rpm	: 300	rack travel mm : 4.00
guide sleeve		Rated speed rpm : 1560
travel mm Tolerance mm	: 1.05 : +- 0.25	+ Tolerance 1/min : +- 15
TOCCIONICE MAN		rack travel mm : 0.50
Rated speed rpm	: 550	+ Tolerance mm : + 0.50
guide sleeve travel mm	: 2.75	+ Rated speed rpm : 1730
Tolerance mm	: + 0.25	+
Dakad awasil was	. 1500	LOUITNIE
Rated speed rpm guide sleeve	: 1500	LOW IDLE
travel mm	: 8.55	+
Tolerance mm	: +- 0.25	+ control lever
		+ position degree : 69.0 + tolerance degree : + 4.0
GUIDE SLEEVE POSI	ITION	+
Ontrod annual mar-	• 1/00	+ control lever + position degree : 13.0
Rated speed rpm	: 1490	+ position degree : 13.0 + tolerance degree : + 4.0
Rack travel in mm		+
Tolerance mm	: <del>+</del> 1.30	† Testing:
		T

Dadad assad ass	. 750	ı
Rated speed rpm rack travel mm	: 350 · 5.80	İ
Tolerance mm		Fuel delivery characteristics
, - (0) 311100 11111		
Rated speed rpm	: 100	Aneroid pressure
		+ hPa : 900
CRT mm min.	: > 8.00	Rated speed rpm : 800
Dust of an end and	. /00	+ Del. quantity + cm3/1000 strokes : 94.5
Rated speed rpm	; 400	Tolerance
TORQUE CONTROL		+ Check tolerance
		+  cm3/1000s. : + 4.0
Rated speed rpm		+
rack travel mm	: 11.95	+ Aneroid pressure
Tolerance mm	: +- 0.05	+ hPa :
Dudud award ass	. 900	Rated speed rpm : 500
Rated speed rpm	: 800 : 11.95	+ Del. quantity + cm3/1000 strokes : 51.0
rack travel mm Tolerance mm		Tolerance
TO COT GETTE HAIT	0.05	cm3/1000 strokes : + 1.0
ANEROID/ALTITUDE		+ cm3/1000s. : + 3.0
COMPENSATOR TEST		+
05777110		+ BREAKAWAY
SETTING		<u>†</u>
Rated speed rpm	: 500	Rack travel in mm: 10.90
Pressure hPa		Rated speed rpm : 1425
rack travel mm		Tolerance 1/min : +- 5
Tolerance mm	: <b>←</b> 0.05	<del>}</del>
		†
MEASUREMENT		+ STARTING FUEL DELIVERY
Pressure hPa	• _	T STAKTING FOEL DELIVERT
Rated speed rpm	: 500	Rated speed rpm : 100
nacca opeca i piii	. 300	rack travel mm : 20.00
Rated speed rpm	: 500	+ Tolerance mm : +- 1.00
, ,		+ Del. quantity
Pressure hPa	: 380	+ cm3/1000 strokes : 155.0
rack travel mm	: 1.80	+ Tolerance
Tolerance mm	: +- 0.10	+ cm3/1000 strokes : +- 8.0 + Check tolerance
Pressure hPa	: 190	cm3/1000s. : +- 11.0
rack travel mm	: 0.55	1
Tolerance mm	: +- 0.05	<u> </u>
		+
START CUT-OUT		+ LOW IDLE
Pated speed non	: > 100	Del. quantity
Rated speed rpm Rated speed rpm	: < 270	- cm3/1000 strokes : 13.0
nated speed i pili		+ Tolerance
Check		- cm3/1000 strokes : +- 2.0
speed 1/min	: > 80	+ Check tolerance
Check		+ cm3/1000s. : +- 4.5
speed 1/min	: < 290	Spreed
		+ Tolerance
		+ cm3/1000 strokes : 5.5

Check tolerance cm3/1000s.	:	9.0	
End of test speci	fica	tion sheet	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 11.04.96

Test oil

: ISO 4113

Combination No. : 9 400 085 390

Injection pump

Pump designation : PES6A95D410RS2886

EP type number : 9 400 084 039

Governor

Governer design. : RQV300...1300AB1310L

Governer no.

: 9 420 080 388

Cust. part No. : 0260746902

Customer-spec. information

Customer

: MBB

Motor

: OM 366LA/EURO I

Power KW

: 150.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

173.5

Tolerance bar : +- 1.5

Test Lines : 1 680 750 015

6.0

Outside diameter :

N23

x inside diameter : 3.0 x length mm :

600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 3.00 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

# BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 11.85

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 95.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes :

3.5

Check tolerance

cm3/1000s.

8.0

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  (B) SETTING OF IN	: +- 2.0 : +- 4.5 : 5.5 : 9.0	Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  CONTROL LEVER  control lever position degree tolerance degree  control lever	: 8.0
WITH GOVERNOR		+ position degree + tolerance degree +	
GUIDE SLEEVE TRAV		RATED SPEED	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.05 : +- 0.25	rack travel mm Rated speed rpm Tolerance 1/min	: +- 5
Rated speed rpm guide sleeve travel mm	: 8.55	rack travel mm Rated speed rpm Tolerance 1/min	: +- 15
Tolerance mm  Rated speed rpm guide sleeve travel mm	: +- 0.05 : 500 : 2.55	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 1650
Tolerance mm	: +- 0.25	LOW IDLE	
Rated speed rpm guide sleeve travel mm	: 750 : 4.20	control lever	
Tolerance mm	: + 0.10	position degree tolerance degree	
GUIDE SLEEVE POSI		control lever position degree tolerance degree	
Rated speed rpm Rack travel in mm		Testing:	• +- 4.0
Tolerance mm		Rated speed rpm	: 300
FULL LOAD DELIVER	Y AT FULL LOAD STOP	rack travel mm Tolerance mm	: 8.30 : + 0.10
Rated speed rpm Aneroid pressure	: 1300	Rated speed rpm	: 100
hPa Del. quantity	: 900	CRT mm min.	: > 9.70
cm3/1000 strokes Tolerance		Rated speed rpm	: 375
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 3.0	TORQUE CONTROL	

Rated speed rpm	: 1300	+ Del. quantity		
rack travel mm Tolerance mm	: 11.85 : +- 0.05	+ cm3/1000 strokes : 88.5 + Tolerance		
rocci di loc ilini		+ cm3/1000 strokes : + 2.0		
Rated speed rpm	: 700	+ Check tolerance + cm3/1000s. : +- 4.0		
rack travel mm Tolerance mm	: +- 0.05	+ cm3/1000s. : +- 4.0		
		Aneroid pressure		
Rated speed rpm rack travel mm	: 800 : 12.25	+ hPa : 900 + Rated speed rpm : 800		
Tolerance mm	: +- 0.05	+ Del. quantity		
Dahad award non-	: 1125	+ cm3/1000 strokes : 90.0		
Rated speed rpm rack travel mm		+ Tolerance + cm3/1000 strokes : +- 2.0		
Tolerance mm	: <b>+</b> 0.05	+ Check tolerance		
		+ cm3/1000s. : + 4.0		
ANEROID/ALTITUDE		Aneroid pressure		
COMPENSATOR TEST		+ hPa : - + Rated speed rpm : 500		
		+ Del. quantity		
SETTING		+ cm3/1000 strokes : 54.0		
Rated speed rpm	: 500	+ Tolerance + cm3/1000 strokes : +- 1.0		
Pressure hPa	: 900	+ Check tolerance		
rack travel mm		+ cm3/1000s. : + 3.0		
Tolerance mm	: +- 0.05			
MEASUREMENT		BREAKAWAY		
Pressure hPa	: -	+		
Rated speed rpm	: 500	+ Rack travel in mm : 10.80 + Rated speed rpm : 1385		
Rated speed rpm	: 500	+ Tolerance 1/min : +- 5		
Pressure hPa	: 160	<u>†</u>		
rack travel mm				
Tolerance mm	: ← 0.10	STARTING FUEL DELIVERY		
Pressure hPa	: 350	+ Rated speed rpm : 100		
rack travel mm	: 1.45	+ rack travel mm : 14.90		
Tolerance mm	: +- 0.05	+ Tolerance mm : + 0.10 + Del. quantity		
<del></del>				
START CUT-OUT		Tolerance		
Rated speed rpm	: > 100	+ cm3/1000 strokes : + 7.5 + Check tolerance		
Rated speed rpm		- cm3/1000s. : + 10.0		
Check		<u> </u>		
speed 1/min	; > 80	+		
Check	: < 240	LOW IDLE		
speed 1/min	. \ 240	+		
FUEL DELIVERY CHARACTERISTICS + cm3/1000 strokes : 13.0				
FUEL DELIVERY CHA	INACIERTO (TO	+ cm3/1000 strokes : 13.0 + Tolerance		
Aneroid pressure	000	+ cm3/1000 strokes : +- 2.0		
hPa Rated speed rpm	: 900 : 700	+ Check tolerance - cm3/1000s. : +- 4.5		
Hara apaca (pill	, , , , ,	1		

Spreed
Tolerance
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000s. : 9.0

End of test specification sheet